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# Occupation of Japan and Japanese Reaction

MAJOR GENERAL CHARLES A. WILLOUGHBY, *General Staff Corps*  
Assistant Chief of Staff, G-2, United States Army Forces, Pacific

ON 26 August 1945, after three years and nine months of war, the American Third Fleet under Admiral Halsey dropped anchor in Sagami Bay in the opening move of a swiftly developing plan of occupation.

At 0900/I on 28 August communications experts, after being delayed two days by typhoons, were landed at Atsugi Airdrome seventeen miles west of Yokohama, followed three hours later by thirty-eight transports carrying combat troops, supplies and equipment. The next two days having been spent in readying the airfield and reconnoitering the surrounding area, large-scale landings of the Eighth Army's 11th Airborne Division troops were begun at 0600/I on 30 August, forty-men plane loads descending at three-minute intervals throughout the day. Simultaneously the 4th Marine Regimental Combat Team under command of Rear Admiral Badger landed and took possession of Yokosuka Naval Base.

At 1400/I General of the Army MacArthur, accompanied by Generals Sutherland and Eichelberger, landed at Atsugi and, proceeding to Yokohama, established temporary headquarters in the New Grand Hotel. Two days later, on 2 September, the surrender documents were signed aboard the USS *Missouri* and General Order Number 1, requiring all Japanese forces at home and abroad to lay down their arms and submit to the directions of the Allied authorities, was issued by the Japanese Imperial General Headquarters by command of the Emperor. General MacArthur presided at flag-raising ceremonies at the American Embassy buildings in Tokyo on 8 September, and on 17 September moved his headquarters to Tokyo and took residence in the Embassy.

The remainder of September saw the Eighth Army, under command of General Eichelberger, with headquarters at Yokohama, extend its control over northern Honshu and Hokkaido, while the Sixth Army, under command of General Krueger, with head-

quarters at Wakayama, assumed control in southern Honshu, Shikoku and Kyushu. By the first of October our forces were firmly established throughout Japan.

General MacArthur's headquarters, established in Tokyo as both General Headquarters of the Supreme Commander for the Allied Powers and General Headquarters United States Army Forces Pacific, included: Lieutenant General R. K. Sutherland, Chief of Staff, and Brigadier General B. F. Fellers, Military Secretary; Major Generals S. J. Chamberlain and R. J. Marshal, Deputy Chiefs of Staff; Major General C. A. Willoughby and Brigadier Generals W. E. Chambers and H. E. Eastwood as Assistant Chiefs of Staff; and Brigadier General W. E. Crist, Chief of the Government Section. British, Soviet, Chinese, and Australian liaison officers were accredited to Allied Headquarters.

Within two weeks of the astonishingly smooth initial landing in Japan, a sudden flurry of newspaper and editorial demands for "tightening control" of Japan, and the occasional reference to "kid glove" administration policies, suggested that the Press and the Public had not fully realized the range and character of our occupation of Japan.

The enormous initial military risks of landing with token forces on the Japanese mainland, into a colossal armed camp, the obvious gamble of landing with only two and a half divisions, confronted by sixty-four Japanese divisions, thirty-six brigades and forty odd regiments, were apparently not fully appreciated. All possible landing areas, in the event of American armed landing, were completely organized by the Japanese Army and each one of these areas had the potentiality of another Okinawa. There were perhaps five or six such areas, along the East Coast of Japan—Kyushu, Shikoku, the Kanto Plain, the Sendai Corridor, and others. The Japanese General Staff had enough divisions and brigades to make an attack expen-

sive everywhere. At Okinawa, from two to two and a half Japanese divisions exacted a total of approximately 40,000 American casualties on land, not to mention the shattering "Kamikaze" attacks on the Fleet. This affords a completely authentic yardstick to forecast what it would have taken in losses had we gone in shooting. The sinister ratio that two and a half Japanese divisions exact 40,000 casualties, spells:

Kyushu : 13/14 Divs - 200,000

Shikoku : 4/5 Divs - 80,000

Kanto : 22 Divs - 400,000

Sendai : 2 Divs - 30,000

The conclusions are inescapable.

### Japanese Reaction to U.S. Occupation

Japanese reaction to American occupation cannot be accurately sensed by a mere reading of excerpts from the daily press, nor as an acceptance of present conditions having all happened at one time. Rather the reactions have been cumulative and an effort has been made to trace this development as it has progressed in different sections of society.

The general tenor of Japanese reaction to United States occupation was established by the Imperial Address to the Diet, 4 September 1945, in which the Emperor urged his people to "Work to regain the trust and faith of the world; to contribute to world civilization through the establishment of a peaceful Japan."

All the agencies of the people have, in general, followed the precepts of their ruler and apparently sincere effort has been made to cooperate with United States forces.

The Emperor's initial reaction to the new situation is covered in his speech to the Diet, 4 September 1945. Additional reaction is found in a translation of the following statements attributed to the Emperor in an interview with American correspondents:

- a. "We did not act with the intention that Tojo should make use of the Imperial Declaration of War on the day of the Pearl Harbor attack."
- b. "We desire that constitutional monarchy be established in Japan."

c. "We believe that Japan can make a peaceful contribution toward culture and civilization. Through such a contribution, Japan can find a just position among the nations."

d. "We believe that permanent peace cannot be maintained or controlled through armed force. There is no doubt of our guarantee that the people of Japan can remove the possibility of future wars and can guide Japan to cooperate with other nations again."

From the above it would appear that the Emperor has indicated by his acts and deeds that he is willing to cooperate.

### Government

Since the Potsdam Declaration there have been several cabinets. The first government headed by Higashikuni, was hastily designed for all practical purposes to carry out the terms of occupation and demobilization. That this cabinet was not fully cooperative and maintained an air of reluctance to submit to Allied demands was proved by its resignation because of its inability to carry out the Allied Memorandum of 4 October which provided for the removal of restrictions on political, civil and religious liberties.

The following government headed by Baron Shidehara, who was also appointed by the Emperor, created an Imperial precedent for method of appointment of his Prime Minister. The Emperor in his desire to appoint a liberal who would be acceptable to the Supreme Commander ignored his advisory senior statesman in his choice. This appointment was significant because by his actions he by-passed the militaristic cliques or fantastic nationalists in his endeavor to satisfy Allied demands, to provide for the concern of his people as head of the "family" or to maintain the self-preservation of his throne. Whatever the motives back of this oriental mind, the fact remains that all outward deeds point to a receptive Emperor who in turn appointed a liberal minded Prime Minister with a wide experience in Western manners and foreign affairs.



The Shidehara cabinet although considered by many to be an interim one or of the caretaker status, is not one which is representative since it is appointed, and therefore does not represent the will of the people. The press is taking advantage of its newfound freedom to ask the cabinet to hold immediate general elections so that in the near future the government will be representative of the people and not until that becomes a fact will the outside world have a chance to get the true reaction to the Allied demands for democratic freedom.

The Allied demands for freedom have imprinted in the minds of the Lord Privy Seal and the Shidehara Cabinet that constitutional revisions are quite necessary to make the government representative of the people. That two agencies of the Emperor are separately conducting investigations on this subject suggests that Prince Konoye alarmed the present cabinet with his remarks that the constitutional powers of the Emperor should be drastically curtailed. This might be an indication that the Shidehara government is one which favors the Emperor as the supreme ruler. If this is so, then it does not seem to be a cabinet for the people. It is also a fact, though paradoxical, that Baron Shidehara also reiterated the Charter Oath of Five Articles which has in theory provided Japan with a charter of democracy since the Emperor Meiji's rescript in 1869.

#### Press

The occupation of Japan has provided the press with a rebirth of freedom. It has not been slow to capitalize on this new freedom and is undoubtedly reflecting the increased feelings of the Japanese people.

First example of this is an article which appeared in the Asahi newspaper 5 September 1945. "Understanding people now understand fully that it was Nazi ideology by some official circles which brought about the curse of today. In our country, which is rooted in the people, and where the Sovereign is one with the people, we had from the bottom of our hearts hated the position of leaders with dictatorial airs. Such per-

sons, before they are disposed of as war criminals, are already exposed to severe judgment from the entire nation."

Numerous articles have appeared in its columns which would have been suicidal before but are now typical newspaper copy. The press has accepted its added responsibility and has printed its editorials in a fearless manner which is in marked contrast to the controlled press of the militaristic factions. Its columns have reproduced letters critical of government conditions. It has made frequent and strong demands for the complete retirement or disposal of government officials and decentralization of authority; which greater independence would enable local authorities below prefectural level to act more energetically in the solution of the local problems.

The press has on numerous occasions indicated that it will champion the human rights of the Japanese people and it is making a test case against the brutal police methods throughout Japan. It is another indication that the Allied cause is being aided by the attacks on the police who have maintained such a stranglehold on the freedom of the Japanese. This has aided in producing a co-operative populace in opposition to the police and militaristic factions and has made the work of our occupation forces more simple. As a final factor the press has reacted remarkably in favor of the abolition of State Shintoism and by means of editorials has justified the abolishment of the pseudo religion.

#### Military Powers

Due to utmost loyalty for the Emperor, the will of the Emperor has been imposed upon the Army and Navy to comply with the Allied directives for the disarming and demobilization of military forces. All evidence points to the fact that cooperation has been as complete as conditions permit and every effort has been made, except in a few isolated cases, to carry out the directives to a speedy end. Very little procrastination has been noted and it is apparent that whatever the outcome, the Army and

Navy are now ready and willing to accede to the Emperor's desires for his people.

### Industry

The reaction of industry to Allied occupation is one of indecision. Some of the leaders are desirous of reconversion to peacetime consumers' goods. Minimum control and maximum production was announced as policy by the Ministry for Industry and Commerce. This is in contrast to the tight government control in the war days. An editorial in "Asahi" 10 October 1945, envisages the possibility of a combination of Allied capital and Japanese cheap labor uniting to produce large-scale enterprise. Another example of reaction in industry is the agitation for reform in the vast Mitsui house. It is instigated by young progressive elements who are dissatisfied with the inertia of their elders and they are now making the most of their opportunities.

### Police

The firm grip maintained by the police on the people of Japan has been broken by the directive of 29 September, issued by the Supreme Commander. As a result new trends are developing:

- a. The Home Minister in appointing the Director of the Police Bureau and the Inspector General of Police realized that the old tyrannical rule is over. The voice of the people must be heard.
- b. The Mainichi paper has demanded, through its editorials, a better police force with higher standards and an indoctrination of the understanding of civil rights.
- c. Efforts are being made to attract a better type of recruit to the police force.
- d. It can be noted that there have been numerous instances of evasive action, on the part of the police, to directives issued. The people still fear the police.

### Education

Reactions in the educational field are illustrated by the following:

- a. A current editorial entitled "The Basis

of Education" makes a healthy change and development in the Japanese outlook. In discussing the attitude necessary for educational reform the article puts a fresh interpretation on the meaning of "Good Japanese." Formerly a "Good Japanese" could be described as an obedient, narrow-minded patriot. But now, the editorial states, he must strive to become a good human being and world-wide citizen as well. This cannot be achieved merely by official educational guidance; individual reflection and judgment are necessary. Japanese must have the moral courage to stand up for what they believe is right even in the face of public opinion.

- b. A teacher who insisted on the compulsory study of the military system was asked to resign.
- c. "The Education Minister, Tamon Maoda, gives the following as an integral part of the new educational policy: (1) Freedom of speech, in so far as it is truthful, will be permitted in the schools. (2) Criticism of the Emperor will not be permitted."
- d. "Bureaucratic control of education is incompatible with freedom."
- e. "The restrictive bureaucratic policy pursued during the last ten to fifteen years must be abolished, and the Japanese students taught to think and act for themselves."

### Public Opinion

When the Japanese get out of the bewildered stage they are now in and their anger at those in authority, and realize that the thought police have been eradicated in entirety, freedom of thought will assert itself and the roots of democracy will have a better opportunity to take hold. At present an indicative gauge of the less timid Japanese can be measured from the letters that are appearing in the columns of the newspapers. The following are some examples:

- a. A writer dares to criticize the abuse of national policy and makes the fol-

lowing statement: "I believe that one of the basic reasons for the defeat was the suppression of all discussion on national policy. What developed during the last few years was a tyrannical and biased national discussion along the lines 'We are right and all others are wrong'."

- b. Transfer of the Imperial prerogatives of legislative power, of supreme command of the armed forces and the power to confer titles of nobility.
- c. Popular election to an office something between that of the Prime Minister of England and the President of the United States.
- d. The official so elected would represent the government. No vital decisions could be made without concurrence of the two elected houses of the Diet.
- e. The new constitution would place in the people's hands the power to prevent the recurrent war. Vital decisions must not be under the power of any one man and the people must be taught to assume individual responsibility by exercising right of franchise.
- f. To implement the foregoing, it is essential for all heads of Ministries, Sections and Departments in the Government, Regional and Prefectural Governors, and even mayors who were appointed during the past five years to be retired.

The newly won freedom is bound to unleash the opinion of the communist, liberal, the educated and the progressive. As bold opinion is dared to be made it will undoubtedly soon crystallize into trends which will need to be analyzed thoroughly.

### Church

With the ultimatum from the Supreme Commander that "State Shintoism" had to be abolished, it will now be necessary to observe the reaction that will or has taken place.

To date one newspaper has delivered a surprising approval of the Allied demands and it challenges the religious leaders, who

have heretofore misused their religious functions under government oppression, to free themselves from the yoke and carry out their true mission of restoring faith and eliminating indifferences, degeneracy, and savagery. The effect of this edict is quite reactionary on the Japanese who have been thoroughly schooled in a nationalistic religion which recognized only its own race as to the right of survival.

There has been no comment on the status of religions by religious leaders, therefore it is not known what reactions are in order. One internationally known Christian leader may possibly have expressed the sentiments of the clergy however in his remarks made in an open forum concerning democracy. He apparently still favors retention of an unchanging central figure (i.e. the Emperor).

### Korea

The occupation of Korea by Allied Forces has not been on the even keel as has been noted in Japan. The sudden freedom for Korea has found the people unprepared to govern or discipline themselves to the realities of a necessary occupation.

The "pent-up" emotions of the people have been manifested in criticism of initial Allied policy, in a critical contempt for the Russians, acts of vandalism and the almost daily incidents of local disturbances, mainly against Japanese or Japanese-owned property. As the novelty of freedom eases off and the Koreans institute a government of their own people it can be expected that the discipline of the people will improve so as to eliminate the tendencies of youth and others to go uncontrolled about the country.

The Japanese have for all practical purposes been cooperative. The Japanese civilians are evidently concerned over the severity of the Korean attitude towards them and were even willing to try to evacuate themselves directly to Japan in small boats. The Japanese Armed Forces appear to be cooperating completely except for some minor cases of former Kempeitai members who are suspected of being affiliated with underground terrorist organizations.

### Conclusions

Japanese reaction to American occupation has been like that of an individual who having been drugged, finds, as the effects of the drug wear off, his faculties returning to him little by little. The press has been unshakled, the man on the street is not afraid to

speaking his mind, the government is breaking away from the old traditions, a new philosophy of education is developing, political status of Japanese subjects has been broadened, and the principles of democracy are beginning to make themselves felt throughout the land.

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### Lessons From the Pacific

**Air Power Paramount:** The basic fact is that in the war against Japan, even more so than in the war against Germany and Italy, victory was won through air power. In the Pacific, a complete victory was scored through the air, without the need for surface invasion and bypassing the enemy's immense surface forces. The classic doctrine that a nation cannot be defeated while its army is intact has been cancelled out for all time.

**Japan's Aviation Blunders:** The Japanese, like the Germans, failed to understand the potentialities of strategic air power until too late. In all their war planning, they had limited themselves to a tactical air force capable of supporting army and navy strategies. Japanese resources were completely committed to this type of air power; besides, they lacked the technological knowledge for the creation of effective strategic air force.

**Inferiority of Enemy Equipment:** Another conclusion is that Japanese equipment became backward. Not only did it reflect backward strategic concepts, but it became technologically inferior, and in some respects relatively primitive. This, in some instances, operated to conceal certain of our own deficiencies; in other instances, it made our prodigious efforts and preparations superfluous.

**Industrial Dispersal and Underground Facilities:** Even before the war, Japanese industry had enjoyed considerable dispersion. It was customary for the Japanese to utilize their dwellings as workshops, where small finished products or components of large units were manufactured.

The Japanese, by taking their industries out of fire-proof, concrete buildings and spreading them throughout flimsy, inflammable living quarters, committed what I might term "industrial hara-kiri." The Home Industry of Japan was the first to go up in smoke under the rain of incendiaries.

**The Enemy's Political Handicap:** A further conclusion is that the totalitarian system of life and government in Japan developed into a terrific burden and handicap. In Japan as in Germany, public opinion was non-existent, so that mistakes and prejudices at the highest levels tended to be frozen and perpetuated.

The authoritarian Japanese system, making pressure from below impossible, denied the enemy the advantages of our flexibility. To the bitter end, the Japanese adhered to the outmoded strategic plans with which they had precipitated the struggle.

*Major Alexander P. de Seversky*

# Breaching the Siegfried Line

MAJOR GENERAL L. S. HOBBS

Commanding General, 30th Infantry Division

THE "Siegfried Line," called by the Germans the "West Wall," was a continuous series of pillboxes and emplacements extending along the western boundaries of Germany from Kleve on the Dutch frontier to Lorrach near Basle on the Swiss border. The Line was constructed in 1939 and 1940 before the development of the German military doctrine of "strongpoints," as illustrated by the heavy defenses along the Atlantic shore and the English Channel coast. It was completed as XIX Corps found it before the Russians had taught the Germans the principle of an all-around "hedgehog" defense. Thus the Siegfried Line contained mainly a large number of reinforced concrete pillboxes for machine guns and 37-mm antitank guns. There was a very limited preparation of open earthworks for heavier artillery, and extensive hasty preparation of field fortifications for infantry.

The Siegfried Line was built on the first natural barrier east of the German frontier, and where this natural barrier was weakest the pillbox concentration was strongest. The basic principle behind the placement of pillboxes and antitank barriers was simple and logical: namely, to increase the defensive potential of the terrain along the German frontier. Where tanks and infantry would have a difficult job in attacking (as across the Rhine River) the defenses were sketchy. Where a natural attack corridor existed (the Belfort Gap, the Moselle River Valley, the Aachen Plain), there the defenses were most dense.

In the XIX Corps sector, the Line was a continuous obstacle extending across the whole Corps front. It was here constructed to implement the natural obstacles formed by the Wurm River and, in the north five kilometers of the sector, the Wurm and Roer Rivers. The only portions not lying behind a water barrier were immediately north and west of Aachen. To make up for the lack of the river barrier across the ridge line

leading into Aachen from the north, the Germans here constructed the only dragon's teeth antitank obstacles in the whole Corps sector. For over seventy per cent of its trace in the sector, the water barrier is backed up by a railroad line that leads northward out of Aachen. The railroad follows the Wurm River Valley; and in order to keep the track as straight as a railroad requires, numerous cuts and fills had to be constructed in the meandering stream bed, forming a further obstacle to tank employment.

The pillbox band was roughly three kilometers in depth behind the river-railroad line. At only one point in the line was there an appreciable thinning out of these pillboxes. This occurred at the point where the Wurm River Valley joins the Roer River Valley; and this junction is itself a barrier to cross-country movement; so to protect it, the greatest concentration of pillboxes in the whole sector occurred on the nose south of the stream junction.

*Mission.*—The major overall mission of the XIX Corps was to rupture the Siegfried Line and advance to secure a bridgehead across the Rhine River in the Cologne—Dusseldorf area.

## The Attack

*Artillery and Air Support.*—The artillery preparation for the XIX Corps assault on the Siegfried Line began on 26 September and continued until 2 October. A 155-mm gun battalion was given the mission of destroying all pillboxes which could be located on the 30th Division front. The battalion fired on a total of forty-five pillboxes, within its field of fire and observable, with varying success, during this period.

The second phase in the artillery preparation was the "blackout" of the enemy's anti-aircraft batteries. For fifteen minutes just prior to the air strike 100 different anti-aircraft installations were fired on by XIX and VII Corps Artillery and the 30th Division Artillery. This program was highly suc-



cessful, since there was hardly any ack-ack reported over the target area and no planes were lost in the operation.

The airstrike at H-120 was intended (1) to effect a saturation bombing of the breakthrough area and (2) to knock out by dive-bombing the pillboxes immediately facing the two assault regiments as well as (3) to knock out all reserves which could be used for immediate counterattack. However, IX Tactical Air Command was able to supply only a limited number of medium bombers and fighter bombers. A misunderstanding caused confusion among the mediums of the first mission as they approached the target, and as a result, only four groups of bombers dropped any bombs on the target area. Fighter-bombers, on the next mission, dropped their gasoline "jelly" bombs in close proximity to the pillboxes that were their target, after the waiting infantry of the 30th Division noticed them circling uncertainly and aided their aiming with red smoke laid on the exact targets by their artillery.

With the completion of the air strike at H-hour (1100), the two assault regiments, the 117th and 119th Infantry, attacked abreast. The 30th Division Artillery supported the attack with an elaborate program of prearranged fires. The regimental plan for continuous use of all mortars until the last possible minute and then shifting the mortar fire to the edges of the town when the battalions reduced the pillboxes, was one of the main factors in the speed with which units crossed the river and the railroad track. The 4.2-inch chemical mortars, after the mission of breaking all wire on the assault front, took up a rolling barrage in front of the 117th's first battalion. During this entire time the 81-mm mortars of the entire regiment, employed in battalion batteries, fired on adjoining areas along the cliff on the north edge of Palenberg. This continuous mortar fire, up to the time the boxes were reduced, absolutely prevented any outside assistance to the pillboxes. The divisional artillery in the meantime neutralized likely assembly areas on the flanks and rear of the objective, being reinforced in this phase

by battalions from both Corps and Army artillery. This program was greatly intensified over that originally planned, due to the fact that the air strike left most of the target area completely untouched.

The 30th Division Artillery plan virtually blanketed areas from which German fire could be brought to bear on the attacking infantry. For use during the attack, in addition to the 92d Chemical Battalion's 4.2-inch mortar barrages and other fires, 339 previously prepared concentrations were designated.

Starting at H-hour, XIX and VII Corps artillery fired counterbattery missions on enemy artillery locations which had been plotted and verified over the preceding five to six days and against batteries capable of firing into the 30th Division sector, as well as several other counterbattery missions fired on locations picked up subsequent to H-hour.

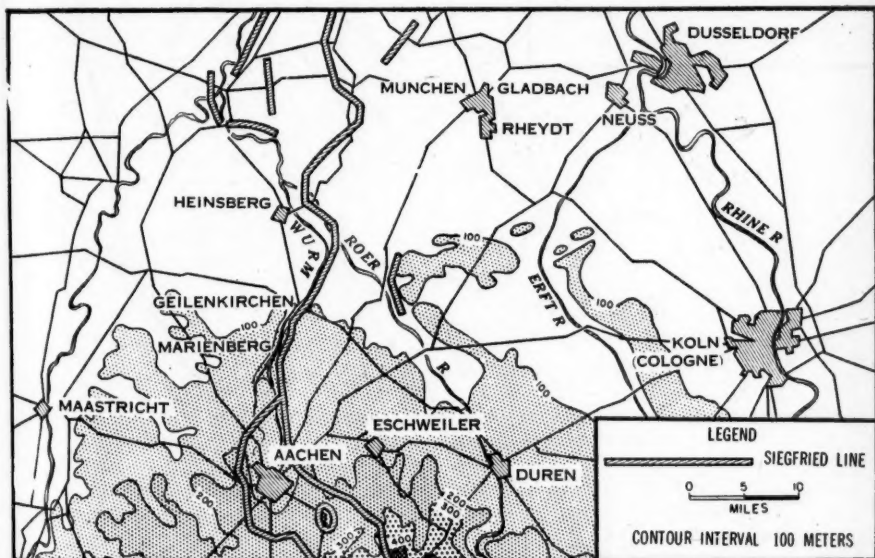
*The Infantry Assault.*—The assault of the 117th Infantry was made at and just south of Marienberg; that of the 119th Infantry was at and just south of Rimbürg. The regiment moving on Marienberg pushed rapidly down the hill to the Wurm River and streamed across on footbridges thrown across the river in a matter of minutes. By nightfall the first battalion had seized its objective, an area in and east of Palenberg. Together with the second battalion it had reduced eleven pillboxes, entirely without tank support.

The 119th Infantry attacked at 1100 in a column of battalions, the 1st Battalion leading, followed by the 2d and 3d Battalions. The 2d Battalion was committed after the 1st Battalion was held up. The thick woods on and in front of the steep slope that confronted the assault elements of this regiment made impossible any observation of pillboxes or enemy movement within its area. The 155-mm guns (self-propelled), were unable to damage the pillboxes in the woods. The effects of the jelly bombs dropped during the air strike were also negligible. No pillboxes were hit, and the woods failed to burn because of the dampness and green nature of foliage and underbrush.

Artillery fire on the 1st Battalion was rela-

tively light initially, becoming heavier as attempts to assault the woods frontally were made. Artillery reaction on the 2d Battalion was heavy and concentrated. Here, for a period of forty minutes, the enemy put over a battery concentration every five seconds. The enemy had direct observation of this area until several days later when the attack forced their observation posts off the high ground to the north and south of the

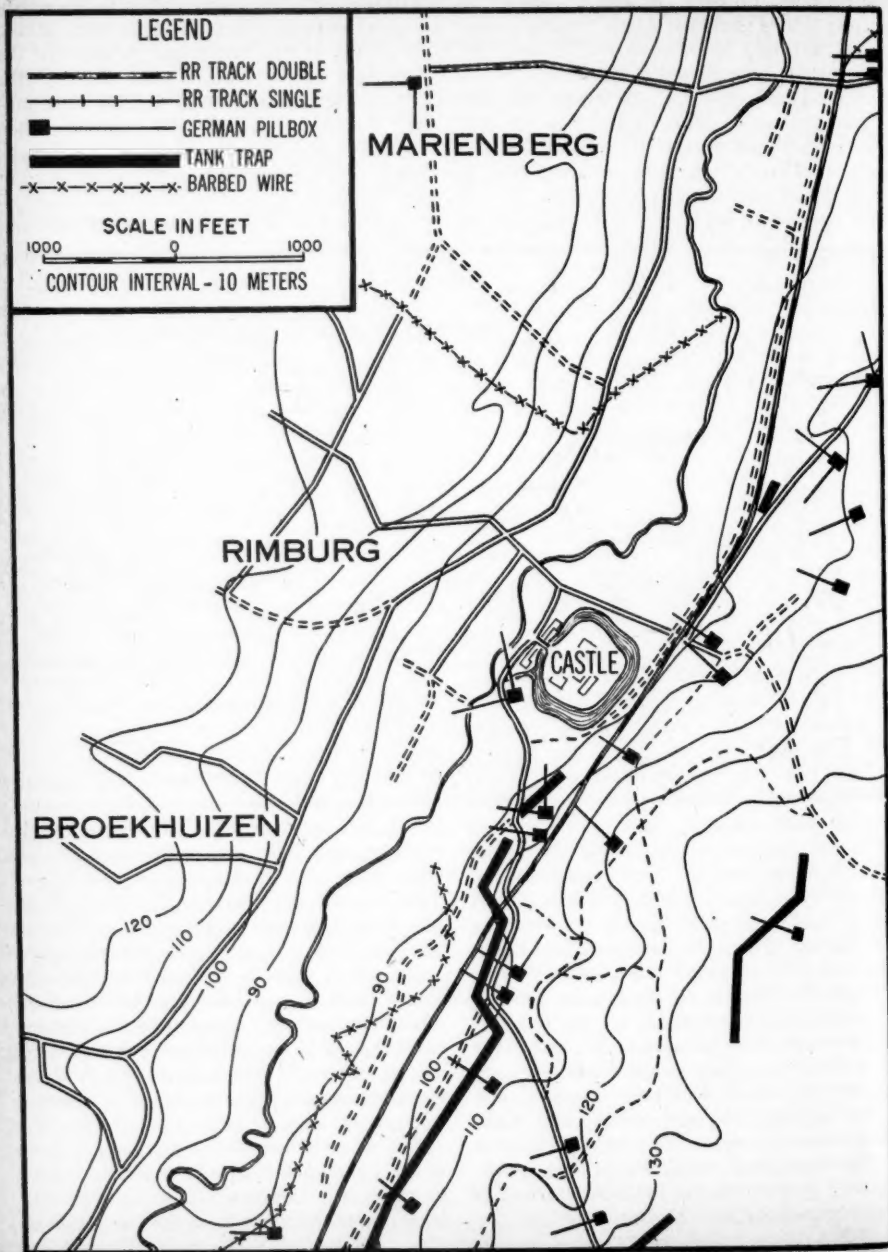
Battalion effected a penetration to the north-eastern edge of the woods. It then swung its attack to the southwest to mop up the defenders in the woods and destroy the pillboxes. The steep slope around each pillbox was honeycombed with communication trenches and machine-gun emplacements. When any break in the underbrush permitted artillery or mortar fire, and friendly troops were drawn back to permit this fire,



breakthrough. Attempts by the 2d Battalion to install a treadway bridge over the Wurm River during daylight were rendered impossible by enemy artillery. The bridge was finally installed at night but was subsequently knocked out twice and damaged several times. Two enemy machine-gun companies initially manned the defenses in the greater part of the woods and throughout put up a determined stand. (These were reinforced later by another company when approximately half of the woods had been cleared.) Observed artillery fire and mortar fire could rarely be used against this defense because of the closeness of the opposing lines. After a strong position at the Rimburg castle had been reduced by the 2d Battalion, the 1st

the defenders would go into the pillboxes for protection and man their outside positions when the shelling lifted. Tanks and TD's [tank destroyers] could be used on only a few of these pillboxes because of the steep slope and thick woods. Flanking these positions by moving around on the open ridge above the woods was prevented by direct fire weapons firing from the vicinity of Merkstein Holstadt. Clearing of the woods was accomplished after severe close-in fighting with opposing lines rarely getting farther apart than twenty-five to fifty yards.

The Wurm River proved a serious obstacle to the attached tanks and the attached TD's. In the 119th Infantry sector the 10th Engineer Combat Battalion got a treadway



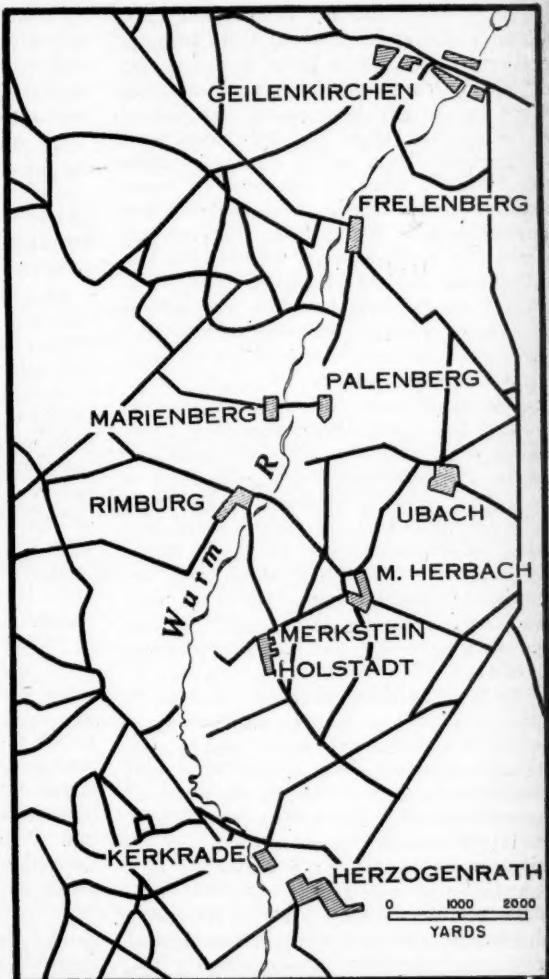
[bridge] in; but on reaching the far side all but one platoon of tanks became mired in the boggy meadow. By the next morning, the 247th Engineer Combat Battalion and the 1104th Engineer Combat Group had installed a trestle at Rimbürg and a Bailey [bridge] at Marienberg.

On 3 October, aided by tanks of the 743d Tank Battalion and Combat Command "B" (CCB), 2d Armored Division, the 117th Infantry continued to advance. One battalion of the 119th Infantry, in the wooded area of the castle at Rimbürg, attacked south against the flanks of the pillboxes that were interdicting a direct advance east. Three of these pillboxes were captured without any tank support. Marshy terrain canalized tank movement and prevented their use in this maneuver.

In the early morning of 4 October, the enemy launched his first serious counterattacks, two against one regiment and one against the other. Not more than two companies were employed in these counterattacks, and they were repelled after a stiff fight. Supporting artillery played a dominant role in breaking up these counterattacks. Two smaller counterattacks were beaten off in the latter part of the afternoon. Ubach was the focal point of the operations this day. CCB, 2d Armored Division, was passing through the town on its way east and northeast, while infantry units were trying to organize attacks out of Ubach to the south. The enemy took advantage of this concentration to place the heaviest artillery fire on Ubach which our troops had ever received.

The following day, despite ninety-nine counterbattery missions by the artillery, the

hostile shelling was even more intense. Two battalions, one from each regiment, launched a coordinated tank-infantry attack south from Ubach; and though one was held up by fire on its left flank, the other reduced eleven pillboxes and reached the high ground



east of Herbach. The remaining two battalions of the 119th Infantry, still without tank support, made slow progress in clean-

ing out the woods facing the railroad tracks south of Rimbürg castle.

CCB, 2d Armored Division, outflanked and captured the pillboxes north of Palenberg on 5 October up to and including Frelenberg. Other elements of CCB advanced northeast two to two and a half kilometers.

On 5 October 1944, the 3d Battalion, 120th Infantry was attached to the 119th Infantry and crossed the Wurm River in the vicinity of Rimbürg with the mission of attacking south in the gap between the 1st and 2d Battalions, and seizing the high ground south of Herbach. Main enemy opposition after the battalion attacked consisted of heavy artillery concentrations from the east and small-arms and 75-mm direct fire from the vicinity of Herbach. On 6 October the battalion continued the attack to its objective.

On 7 October this battalion was ordered to seize an objective 500 yards east of Herzogenrath. The route of this attack was generally cross-country.

Observation posts and foxholes in open country were camouflaged with straw to resemble small haystacks. Pillboxes with steel cupolas were apparently used principally as observation posts with the aid of a very good periscope. Ports in cupolas make 360° fire possible for weapons as big as Model MG 42. No anti-personnel mines were encountered. Antitank mines were not used extensively, except in the vicinity of Herzogenrath where they had been sown in great confusion.

The 120th Infantry Regiment, less the 3d Battalion in division reserve, aided the penetration by making feint attacks, and by seizing the populated area of Kerkrade west of the Wurm River, immediately south of the point of actual penetration by the 117th and 119th Infantry Regiments.

Operations on 6 October ended all German hopes of holding the Siegfried Line in the XIX Corps sector. At 0700 the enemy launched its strongest counterattack against our forces, employing a maximum of two battalions, four assault guns, two tanks, and heavy artillery and mortar fire. The counter-

attack recaptured four pillboxes, forced the second battalion of the 119th Infantry to withdraw 800 yards, and caused considerable casualties before it was stopped. The lost ground, however, was regained by nightfall, and the 3d Battalion of the 117th Infantry pushed down to Ubach. In the meantime, the 1st and 3d Battalions of the 119th Infantry with tank support cleaned out the remaining pillboxes in the woods south of the Rimbürg castle. The enemy's efforts to check the penetration had definitely crumbled.

By 16 October the 30th Division had rolled up the Siegfried Line from north to south and with the 2d Armored Division had completely destroyed the pillboxes along a fourteen-mile front, and had penetrated six miles through the Line.

*The Armored Assault.*—The shock action provided by the entry of the tanks into the battle played a dominant role in securing and holding the north half of the penetration and bridgehead in the Line. The German will to fight was appreciably affected by the penetration of tanks into the rear zones of the Line.

The technique used most frequently to attack pillboxes was to concentrate heavy machine-gun fire with an occasional round from the 75-mm or 76-mm tank gun at the pillbox firing port with a section of tanks. The remainder of the tanks fired on other pillboxes in the vicinity and various prominent features and entrenchments which threatened those working on the pillbox. Under cover of this fire the tank dozer moved in and sealed up the ports and doors of the pillbox. Another successful method was smoking the pillbox and moving in the tank dozer while other tanks covered boxes in the vicinity; the tank dozer, however, because of difficulty of observing his own work in the smoke, at times did not completely seal the ports.

An important lesson relearned was that artillery fire, as a rule, had little effect on tanks. A few tanks, however, were damaged slightly as a result of direct hits on critical points such as turretrace or gun mantle.



## PTs in the Pacific

CAPTAIN M. R. BROWNING, *United States Navy*  
Instructor, Command and General Staff School

**R**ELATIVELY few people, either within or outside of the armed services, have a full appreciation of the vital contribution made by the Motor Torpedo Boat to the United Nations victory in the Pacific. True enough, at the very start of the war, the spectacular work of the six boats of Lieutenant Bulkeley's Squadron Three at Corregidor received wide publicity and acclaim; but little was ever published thereafter concerning the

While the United States boats formed the great majority of the squadrons and flotillas involved in the battle zones, there were British and Dutch craft present also, and frequently in the thick of the almost innumerable actions fought. In like manner, the Japanese, themselves, made extensive and good use of the type in the bitter three years of island warfare from Guadalcanal to Okinawa.

The typical United Nations PT of World



Motor Torpedo (PT) Boat (Official U.S. Navy Photo).

subsequent achievements of these swift and paper-thin little craft. Actually, they were present and figured importantly in every campaign in the step by step advance of our forces toward the enemy home islands. During the war, a total of 694 motor torpedo boats (designated "PT"s) were built for the United States Navy. One out of every ten—a total of sixty-nine—were lost due to all causes including enemy action, but that figure does not by any means indicate the true percentage loss in battle; a large number of the boats were retained on our own east and west coasts and never reached the forward areas.

War II was a craft, of about 80-foot length, 20-foot beam, and 5-foot draft. Her manned and equipped displacement averaged about fifty tons. She was capable of very high speeds on the order of forty knots in reasonably smooth water. At slow speeds, she could sneak along almost silently. Usually, she was triple screw propelled, with multiple rudders, and could maneuver very swiftly and radically. Except for some very light splinter shielding at control stations, she was unarmored, and her hull was reinforced plywood of cardboard thickness. She carried four or five machine guns ranging in sizes from .50 caliber to

40-mm. As her class name implies, her main offensive weapon was the torpedo, of which she carried one or two in launching racks on each side of her deck. She was also fitted to carry depth charges and she frequently did so for use against enemy submarines. She had excellent high frequency radio equipment and efficient radar. Smoke generating apparatus on her stern completed her armament. Her main reliance against more heavily armed surface vessels, such as destroyers, rested in (1) stealth and concealment during approach, (2) her speed, agility and small size, (3) smoke cover in retirement.

Japanese PTs were smaller, slower, less heavily armed, and lacked the fine electronic and communicating equipment of the typical American and British boats.

#### Early Pacific Operations

Following the southward retirement of the American, British and Dutch naval forces from the Philippines in December 1941, they fought the series of abortive delaying actions known as the Java Sea Campaign in the waters north of Java. PTs—mainly Dutch—based on ports in eastern Java, participated in the deployments of the heterogeneous allied units in these operations, but they never succeeded in any effective action against Japanese ships. Many of them fell into the hands of the enemy when Java was finally overrun in March 1942, following the virtual annihilation of the United Nations' cruiser and destroyer forces during the last days of February. Some of these same captured Dutch PTs were encountered by our forces in campaigns two and three years later when the tide of war had reversed.

After the Java Sea Campaign, there remained in United Nations' hands no PT force able to participate in further efforts to stem the Japanese advance toward Australia during the first months of 1942. In the Central and Western Pacific, there was, of course, no opportunity to employ such boats in the carrier raids and running bombardments of Jap-held islands which comprised the only actions in those areas until the Battle of Midway on 4-6 June. All of those

engagements took place deep in enemy held territory and separated by thousands of miles of open water from the nearest American bases. In the meantime however, as rapidly as the boats could be built and put into service, they were being placed at all our outlying strongpoints to bolster their defense. Squadrons were located at Panama, Hawaii, the Aleutians and Midway. In the Battle of Midway, a unit of eleven PTs contributed marked assistance in repelling the enemy air attacks on the first morning of the engagement. Had the Japanese landing actually been attempted, it is a sound conjecture that these PTs would have been one of the most effective elements of the island's defense. Throughout the night of 4-5 June, the entire squadron swept the sea to the northwest of Midway searching for the disabled enemy carriers and intending to torpedo them. That they were unable to locate their quarry was due to the fact that the Japanese ships had sunk sometime during the hours of darkness.

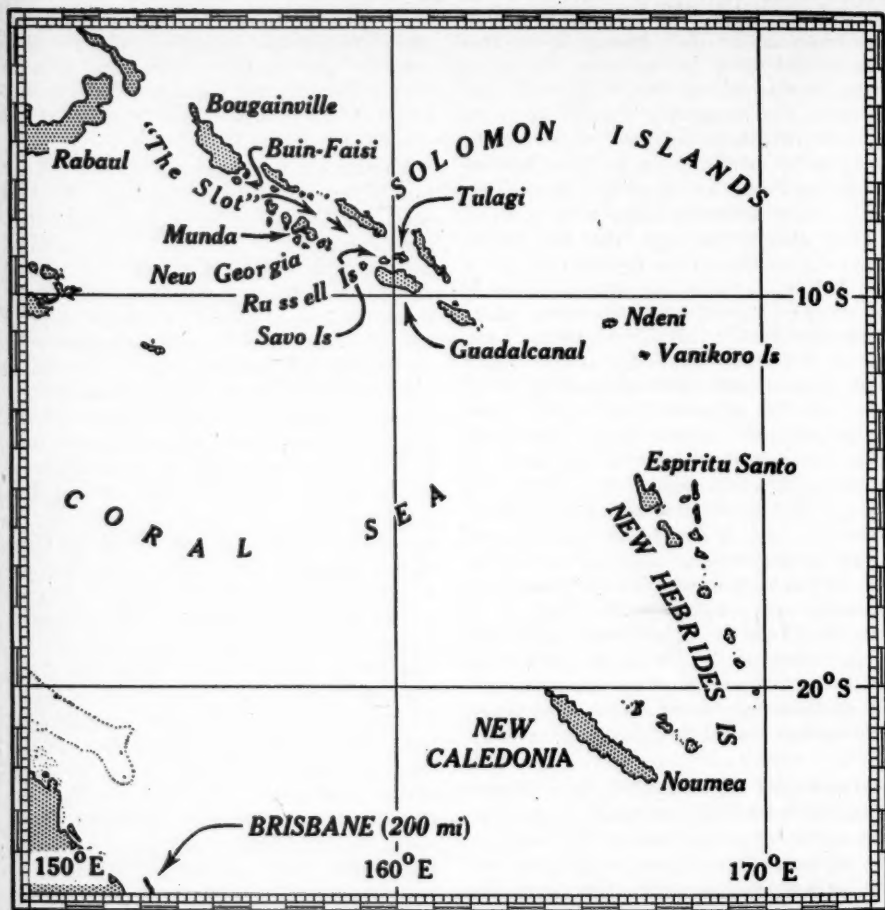
Following the Midway battle, the next appearance of the PTs in action was in the South Pacific. Here, the months of August 1942 to February 1943 found the United Nations' forces locked in the savage struggle for Guadalcanal in the Solomon Islands. The narrow and sheltered waters and innumerable bays and inlets of the Solomons archipelago offered ideal conditions for effective employment of motor torpedo boats. The Japanese were known to have been making good use of them there from the outset of the campaign. There were indications that they were probably present at the first Battle of Savo Island on the night of 8-9 August, and they may have made torpedo hits on at least three of the four heavy cruisers which were lost to us in that disastrous action. Whether or not that was the case, there could be no questioning in the fact that the Solomons offered a "natural" theater for PT operation, and we, accordingly, bent every effort to get them there. However, there were tremendous obstacles to be overcome before this could be accomplished. The boats could not cross the long reaches of the Pacific under their own power, and they

were far too frail to be towed for long distances in the open sea. The only possible way to accomplish their passage to the area was to ship them out in cargo vessels in which, at that critical time, every cubic inch of space was desperately needed for other purposes. Furthermore, the boats were too heavy to be handled by any ship's hoisting equipment in any vessel we had, so that external heavy crane facilities were required at both ends of the trip. This was simple enough at the United States west coast ports and in Hawaii, but at the outer terminal of the voyage the nearest dockside cranes which were capable of handling the 50-ton loads were at Brisbane—1,200 miles of open water from Guadalcanal. Notwithstanding these difficulties, the potential value of the boats in the peculiar warfare being waged, was such that it was imperative that they be brought in by some means. The problem was finally solved by building a cantilever crane in sections back in the States together with a sectional ponton barge to mount it, shipping the sections to Noumea, New Caledonia, and unloading and reassembling it there. As it was, this "Rube Goldberg" crane was barely able to negotiate the lift of the boats from the decks of the cargo ships and each such pick-up was a hair-raising operation requiring ideal weather conditions and consuming many hours.

After having been unloaded, the PTs were fueled and loaded with ammunition and supplies and given a brief test of main engines and all equipment. As soon as all gear was found functioning properly, they were dispatched in groups of four or five boats with a conveying vessel to make the thousand-mile run to Guadalcanal by a series of steps from island to island, up the New Hebrides chain. They kept to sheltered water on the leeward side of the successive islands whenever and wherever possible. By this devious and pitifully slow method, the first four United States PTs to enter the Solomons campaign arrived at Tulagi, in the Guadalcanal area, at dawn on 25 October 1942. An advanced MTB operating base was established at that

location forthwith and incorporated under the overall command of the Commanding General, Guadalcanal. Additional boats joined to augment the squadron from time to time during the following months, as fast as they arrived in Noumea and could be unloaded and processed.

No time was lost in getting the new weapon into action against the Japanese. At that time, and from then on until the final complete evacuation of the enemy's Guadalcanal position, the "Tokyo Express" ran almost nightly from Bougainville down "The Slot." From the first of November on, the ships of the "Express" were attacked repeatedly by our PTs in the waters between Guadalcanal and Savo Island. On many occasions the enemy operations were so harassed and impeded by these attacks that they were completely ineffective in aiding his beleaguered troops ashore. But the little force of PTs did not confine its damage to the enemy to mere harassment and annoyance. On the night of 6-7 November they sank a Japanese destroyer. Shortly thereafter they got torpedo hits in two more destroyers; these, however, succeeded in escaping to the north. On the night of 13-14 November, during the three-day fateful Battle of Guadalcanal, six PTs accomplished a task for which a major task force would ordinarily have been required, for they forced a strong enemy force of cruisers and destroyers to break off a destructive bombardment of Henderson Field which we were unable to oppose by any other means that night. In their attack on that occasion, the PTs fired seventeen torpedos with one known hit and probably several more. It has been said that this David and Goliath engagement may well have saved Guadalcanal, for there was no way in which Henderson Field and its airplanes could be sheltered from the enemy ships' fire, and a previous similar bombardment in October had resulted in destruction or crippling damage to nearly every aircraft on the field. In the light of the fact that, on the following day, the all-out amphibious assault of the Japanese joint task force was met and disastrously de-



feated by planes from Henderson Field, it may well be that our six "mosquito" boats actually did save the island and, with it, our whole South Pacific position.

In the two and a half months following the naval Battle of Guadalcanal, the PTs continued their unique and invaluable work, being officially credited with "inflicting substantial damage" on the "Tokyo Express" in its nightly runs. By 8 February, the date upon which Guadalcanal was announced as com-

pletely in the hands of our troops, our tiny PT force had run up a confirmed box score of three Jap destroyers sunk and at least eight of them seriously damaged, plus a large number of enemy barges and landing craft, and considerable quantities of supplies, destroyed. In addition, they had repeatedly performed superbly in rescuing survivors of United States men-of-war sunk in the frequent and violent night surface ship encounters in the area. In the same period of time,

our PT losses due to enemy action were two boats destroyed and three damaged. Our little investment was starting to pay tremendous dividends.

February 1943, saw a lull in PT activity; the enemy was no longer risking his ships far enough to the south for them to be reached by small craft. The quiet period was utilized to prepare for the next step in the march up the Solomon chain. At month's end, an MTB advanced base was established in the Russell Island group, some thirty miles northwest of Guadalcanal. A squadron of PTs, working from that base, provided an essential element in the defensive cover for our assembly, in the Russells, of forces and supplies for the coming assault on the Japanese positions in the New Georgia group. Meanwhile, additional boats continued to arrive from the States and to be sent on up to the advanced bases which we had built. By mid-June, we had four such bases in full operation, with upwards of forty-eight operating PTs working out of them.

For the New Georgia assault, the main landing was scheduled to start at dawn on 30 June. The MTB squadron based in the Russells screened and covered assault boats during the landing. As operations progressed, two more advanced PT bases were established in New Georgia inlets which we seized, and, from then on throughout the remainder of the campaign the boats were employed in a manner similar to the pattern of their previous operations at Guadalcanal. Nightly, they patrolled the narrow and tortuous water passages which provided the only link between the now surrounded enemy and his bases to the northwest. Every night of the five week's battle until the main position at Munda fell into our hands was featured by brisk PT engagements with enemy destroyers, barges, and shore parties. Again, the little craft paid off in terms out of all proportion to their cost. Again, as had been the case at Guadalcanal, there were costly failures in identification and in coordination, but as time went on, the mistakes became fewer and the credit side of the ledger loomed larger

and larger. The Motor Torpedo Boats, Pacific, had developed into a vital factor in the island warfare and their crews were becoming seasoned veterans of the swift and stealthy night combat which formed their forte.

### Lessons Learned

The operations of those first nine months delineated the tactical pattern of PT employment in war, and high-lighted the need for a number of improvements in the original equipment of the boats. Of these latter, the three most important and far-reaching changes were: (1) installation of more efficient radar, (2) improvement in radio equipment, and (3) need for automatic fire-power heavier than .50 caliber. These lessons were the origin of the much improved PTs which appeared in the combat zones in the later years of the war.

In the matter of tactics, the outstanding weakness which was divulged by the Guadalcanal and New Georgia campaigns was the need for better recognition between PTs and other friendly ships and aircraft. There were numerous instances when our PTs attacked—or were themselves attacked by—our own airplanes and ships. Several of these resulted in destruction of one or the other unit, or in severe damage, and there was some loss of life. On one occasion—the night of 14-15 November 1942 American battleships and destroyers, sweeping around the western tip of Guadalcanal on their way to the night encounter in which the last of the attacking Japanese naval force was routed, were reported by our patrolling PTs in clear voice radio, under the belief that they were Japanese ships. The United States task force commander, Admiral Lee, was forced to open up, himself, and broadcast a plain language order to the boats to prevent almost certain disaster. Fortunately, the enemy force, which was still some distance away to the northwest, did not pick up this dangerous exchange of messages, or, if it did, failed to interpret it properly. A factor of prime importance in connection with such incidents, was the im-



practicability of providing PTs in the combat areas with coding devices for secret communications. Naturally, no highly classified devices could be so exposed to the risk of enemy capture or salvage. Without such equipment, however, boats on patrol could not be informed by radio of changes in tactical plans, or of unexpected developments such as the unscheduled appearance of a friendly force in the area, without jeopardizing security and surprise. There was no way to eliminate this serious handicap; the most that could be done was to endeavor to brief the boats thoroughly at the last minute before they left base for patrol, and to rely on the judgment, indoctrination and recognition training of their crews to prevent disaster when the unforeseen occurred. The cases of breakdown of recognition and coordination which occurred in the early months in the Solomons led to vastly improved training and briefing in later operations. By October 1943, when we had finally killed off all Japanese resistance in the New Georgia group, such occurrences had become extremely rare.

#### To The Philippines and War's End

After New Georgia, the route of our advance in the South and Southwest Pacific took us into Bougainville and thence, in leap-frog fashion, along the north New Guinea coast to Morotai Island and then into Leyte, in the Philippines. In the Central Pacific, a similar thrust speared rapidly westward from the Marshalls to Saipan and Guam and thence to Leyte to close the pincers. The twin offensives were coordinated in time and strategy. Throughout them both, the ubiqui-

tous PTs were everywhere with the single exception of those covering naval actions which took place too far at sea for them to participate. In the operations along the southern flank of the great two-pronged advance, they repeated again and again, with each bound forward, the now familiar cycle of patrols, night barge encounters, and occasional opportunities to strike with their torpedos at larger enemy ships. Along the northern flank, they saw less combat action only because, in that sector, practically nothing that could float had been left to the Japanese. Here, however, they formed an indispensable element in the defense and utility forces of each island base as we seized it. They saw some action at Saipan, Guam and in the Palaus, and when the Southwest and Central Pacific drives met in October 1944, at Leyte, they came once more into their own, for the inland Philippine waters and the swarms of Japanese small craft there offered another "natural" like those in the Solomons and New Guinea.

Just how much enemy tonnage was sunk or seriously damaged during the war by our PTs alone will never be accurately known. Neither is it practicable to make any worthwhile quantitative estimate of the number of enemy personnel so put out of action, or of the military value of supplies which they destroyed. But one thing is abundantly clear; no naval weapon in the Pacific war had a more gallant and spectacular record of achievement, and none returned more valuable results when measured against its cost in men, money and war effort.

There is no doubt that the demobilization is rapid, even hasty, and that the efficiency and the discipline of our overseas forces has declined seriously . . . But it is a mistake to suppose that anyone can measure American power in the future, or even in the present, by the condition of these remnants of the wartime army. For he is overlooking the basic fact that American power is peculiarly and specially amphibious . . .

The Europeans have never really seen the fundamental military power of the United States. The bulk of it was in the Pacific, largely invisible to the masses of the people and not really appreciated by European statesmen and generals who were preoccupied with the terrible struggle of massive land armies.

*Walter Lippmann in "NY Herald Tribune"*

# Movement of Division Command Post in a Fast Moving Situation

COLONEL CHARLES E. JOHNSON, *General Staff Corps*  
Chief of Staff, 3d Infantry Division

DURING its long combat history from 8 November 1942 to 8 May 1945, the 3d Infantry Division, possibly more than any other like unit, has become famous for its lightning-like dashes into enemy territory. Beginning with its wheel around the outer perimeter of over half of the Island of Sicily, and continuing the fighting over tortuous mountain roads in Southern Italy, the 400 mile race from the French Riviera to the Vosges Mountains in Alsace, and ending with a four hundred mile trek from the Rhine to Berchtesgaden, it has become second nature for the division to make prolonged, rapid moves. Not only has it learned to move, but also it has learned to control and direct its units, both combat and administrative, throughout these long and rapid advances. As in all military problems, there are no doubt many solutions. The 3d Division's answer is submitted herewith for consideration.

After it has been done a few times there is probably nothing very remarkable in moving and setting up a Division Command Post once or twice daily for a period of months, continually maintaining communications and enabling the Division Commander to direct and control his troops. However, this is how we did it. First and foremost it must be accepted that it is *important* and necessary to make such moves and that you are actually *going* to do it. Secondly, it must also be accepted that radio and messenger will be the primary means of communication although every effort should be made to put in wire whenever remotely possible. The mechanics of the move can be discussed under three headings:

1. Organization of the Headquarters.
2. Technique of Displacement.
3. Communications.

1. *Organization of the Headquarters.* The attached chart shows the organization of the Headquarters of the Third Infantry Division. It is mostly self-explanatory. It

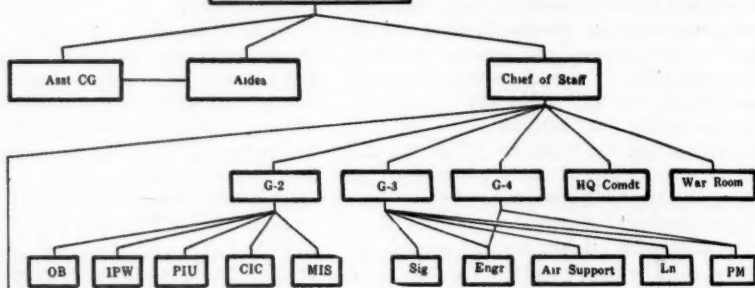
was evolved, indeed, practically forced upon us, by our combat experience and the exigencies thereof.

a. *Division CP [Command Post] (OP Group) [Observation Post].* The mountainous terrain and narrow, tortuous roads of the Island of Sicily, through sheer impossibility to do otherwise, caused the Division Headquarters (that is, the entire headquarters less the Administrative Center) to be divided into two echelons which were called respectively the "Division CP" and the "Rear Echelon." The Division CP, corresponding roughly to the so-called regimental and battalion OP groups, consisted of the Commanding General, Assistant Commanding General and Aides, Chief of Staff, G-2, G-3, G-4, Liaison Section, Division Signal Officer, Division Engineer, Headquarters Commandant, Provost Marshal and their sections. The entire CP was mounted either in trucks or built-up trailers and was, therefore, entirely mobile. This gives a relatively small, compact group, all of whom are primarily interested in the operational phase of combat. Artillery matters are handled by a liaison (field) officer furnished by the CG [Commanding General] of the Division Artillery. He remains in the CP and habitually works in the War Room. The organization of this group was somewhat flexible. For instance, certain of the attached G-2 organizations such as CIC [Counter-Intelligence Corps], Order of Battle, and PIU [Photo Interpreters Unit] were often quartered with the "Rear Echelon" or elsewhere in towns. Upon occasion the Provost Marshal was shifted to the "Rear Echelon" and also the G-4 section was at times placed with the "Rear." However, it was *always* necessary—and *particularly in the fast-moving situation we are discussing*—to have the G-4 or his assistant with the CP, this due mainly to the extremely close cooperation necessary between G-3 and G-4.

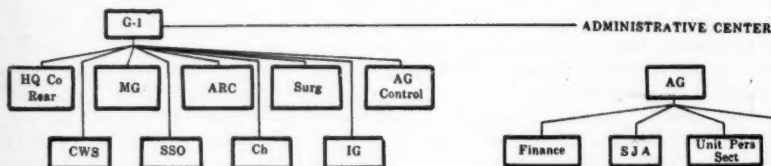
## ORGANIZATION OF HQ 3D INFANTRY DIVISION

## DIVISION CP (FORWARD ECHELON)

## COMMANDING GENERAL



## REAR ECHELON



## NOTES

1. Ordnance, Quartermaster & Medics separate and under G-4 for operation and movement—Ordnance & Quartermaster officers & their staffs remain with their respective companies and not in division headquarters.

2. Combination of personnel from G-2, G-3, & C/S section comprises war room (operations room) in forward CP.

b. The "Rear Echelon" of the Division CP consisted of all remaining officers and sections of the Headquarters (less the Administrative Center). It was located initially anywhere from the same location as the Division CP to a distance of five miles in the rear. Many times when the Division CP was moving daily, the Rear Echelon would not move, but the following day move double the distance in order to catch up. This lagging of the Rear Echelon often served as a valuable communications link between the Division CP and the service troops and installation of the Division. The Rear Echelon was commanded and moved on order of the

G-1, who cleared all movements through the Chief of Staff. The Rear Echelon often moved into the location vacated by the forward CP and in this way expedited the setting up of the headquarters and maintenance of communication since they were able to use the wire lines which the forward CP had used and of course any buildings or other installations already prepared.

The advantages of this organization of the Division Headquarters are obvious and are particularly advantageous in fast moving situations. They are chiefly:

(1) Gives small, compact, mobile groups

capable of rapid displacement and requiring little space in which to operate.

(2) Diminishes vulnerability and increases security.

(3) Provides communications link, hence, control, to the rear.

(4) Due to the shortage of transportation at times, the transportation of the Division CP Group was sometimes used to move the Rear Echelon forward.

Disadvantages are:

(1) The additional requirements of men, officers and equipment necessary to operate these headquarters both in the Headquarters Company and the Signal Company. (The Signal Company, of course, has to reorganize its displacements to conform.)

(2) Some delay experienced at times in getting in contact with staff officers in one headquarters who are needed at another.

c. *The Administrative Center*, grouping the Adjutant General's Office, Finance, Staff Judge Advocate and Unit Personnel Sections, was born as a combat expedient when the division sailed, combat loaded, for North Africa. The Administrative Center, due to insufficient shipping lift, could not accompany the division and operated during this period from a staging area in the States. The same organization was used in the Sicilian Campaign and again at Anzio and Southern France. During the early periods of such operations the "Ad Center" makes an excellent "Rear link" for the division on the "near shore." During the Anzio Beachhead siege, the Administrative Center for four months functioned in the vicinity of Naples, whereas the division was some seventy-five miles away separated by water and enemy-held territory. Not only is the Administrative Center peculiarly adapted to amphibious operations but was also found to be the ticket during a fast moving tactical situation. In the latter case, during actual rapid progress, no attempt was made to move the Center. Only when the situation slowed up or halted was consideration given to the movement of this installation. Communication was maintained by radio, messenger, liaison plane, and at times by telephone.

2. *Technique of Displacement* may be best illustrated by a typical day in the moving of the Division CP during rapid progress.

a. In early morning the Division Commander holds meeting with General Staff, outlines plans for the day and selects tentative area for movement of CP.

b. Commanding General and Assistant Commanding General move out to contact units with idea of rejoining the CP at advance location. With Generals are jeeps mounting SCR 193's for communication with CP.

c. Chief of Staff and/or G-3 interview Signal Officer and Headquarters Commandant, indicate area for advance location of CP, and direct these two individuals to move out together immediately.

d. Headquarters Commandant and Division Signal Officer with detachment from Headquarters Company, including Defense Platoon, move out, taking with them advance Signal displacement.

e. Headquarters Commandant, upon reaching advance location, radios or telephones G-3 or Chief of Staff that advance location for CP is satisfactory or, if not satisfactory, proceeds to a satisfactory locality and sends messages.

f. Chief of Staff directs immediate displacement of the War Room (combined G-2, G-3, Operations Room, usually installed in a building but equipped with CP tent and storage tent, all contained in one 2½-ton truck and trailer which contains electric generator) and directs the G-2 and G-3 with the advance echelons of their sections to move forward and set up in advance location. G-3 quite frequently accompanied the Commanding General when he moved out.

g. Temporary War Room set up in G-3 trailer with Assistant G-2 and G-3 on duty and Chief of Staff physically present in charge.

h. When War Room and advance echelons of G-2 and G-3 sections arrive forward command post, G-3 or Headquarters Commandant notify Chief of Staff that Command Post is in operation.

i. Chief of Staff notifies all headquarters

that advance Command Post is open and directs closing of the Rear CP and movement forward.

j. At late afternoon or night G-1 and possibly other staff officers from Rear Echelon visit Chief of Staff and/or Commanding General to get necessary decisions on pressing matters, signatures, etc.

The primary function of the War Room is that of an information center. Therefore, it becomes a focal point of communications. It cannot be too strongly stressed how important the communications are in this "Nerve Center" nor how vital it is that communications be established with it upon its location in a new area following a displacement.

Discussion of this technique of movement should include the movement of the Division Artillery Command Post. Being small it is not divided into a main and rear command post. More frequent moves than the Division CP are the rule. Every effort was constantly made to keep a direct telephone circuit to Division Artillery but this was more often than not impossible and radio was the rule. However, this was not too important as the Infantry Regiments were for the most part in excellent communication with their direct support battalions which moved in close coordination with them, and further, the nature of the situation precluded, for the most part, coordination and massing of artillery fires on a division level. In most rapid moving situations, the direct support battalions of the Division Artillery had one, two and sometimes three non-organic (Corps and Army troops attached to the division) artillery battalions attached, and functioned as a Division Artillery Headquarters under the command of the direct support commander, keeping contact with division and many times Division Artillery through the Regimental communications, and radio.

3. *Communications.* Our Signal Company was augmented by additional men, radios (particularly SCR 193) and small vehicles, specifically the  $\frac{1}{4}$ -ton and  $\frac{3}{4}$ -ton, furnishing extra wire laying teams and messengers.

Two complete Signal Displacement Installations were organized for the Division CP. One was kept inoperative and mobile at all times, leap-frogging the operating displacement during moves. The "Rear Echelon" had only one displacement which moved as a unit when that installation displaced. As previously mentioned, the Commanding General and certain staff officers were furnished SCR 193's mounted on jeeps which accompanied them whenever they left the CP and were in constant communication with the Signal Center at the CP. Call signs changed daily and, in addition, simple codes were worked out between the CG and Chief of Staff and others so that messages could be sent rapidly in the clear. Training in use of voice radio facilitates this means of communication immeasurably but constant refresher is necessary as this method is not much employed in more stabilized situations. To further cement unit control and to get information to unit commanders, particularly during displacement periods, frequent and extensive use was made of unit Liaison Officers. During movement of the CP they were usually held at the old CP until briefed and released by the Chief of Staff, whereupon they proceeded to their units, rejoining the Headquarters at the new advance CP.

The above organization of Division Headquarters and procedures were evolved through eight major campaigns on two continents and over all conceivable types of terrain. Rapid movements were the features of some of these campaigns, namely:

- a. The 28-day Sicilian Campaign.
- b. The 400 mile dash from Southern France to the Vosges in one and a half months.
- c. The fight from the Rhine to Berchtesgaden, 400 miles in one month. The organization is the result of actual experience, insures unbroken communications and places the Chief of Staff and G-3 (only staff officers normally authorized to make decisions for the Commanding General) in accessible and key spots during movement. Our method may not be the best but it worked.



# Civil Affairs and Military Government

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**C**IVIL affairs includes all of the ramifications of the government and control of civilian populations by military commanders. Throughout the course of military history the handling and control of civilians has had a profound effect on military operations. While Civil Affairs cannot win wars, it can contribute much toward victory.

Throughout the centuries, there has been a long evolution from a civil affairs policy of destruction and enslavement, to a more intelligent policy, which aims toward the fullest possible utilization of enemy resources, both human and material, to insure military success. We now strive to prevent disease and epidemics among civilians, not necessarily as a humanitarian measure, but because we know that disease is no respecter of persons, and that disease which strikes down our enemy, may quickly spread to our troops, with disastrous results to us. We treat the enemy population fairly, though firmly, because we must preserve public order and we want to use a minimum of our own troops for that purpose, leaving a maximum free to fight the organized military forces of the enemy. We have learned that a population made desperate by hunger and hardship will riot, where under fair and efficient rule, with equable and adequate distribution of food and supply to meet even minimum requirements, they will remain quiet. The evolution from extreme harshness to a more humane policy may have been motivated by self-interest and may have developed in part from a realization among conquerors that fortune is fickle and that the victor of today may become the vanquished of tomorrow. The essential point is that an enlightened civil affairs policy, efficiently executed, aids military operations and shortens campaigns.

In World War II, very careful planning and organization for civil affairs control was established. Civil affairs personnel for our Army and Navy, was, for the first time, carefully procured and trained for its special job.

Army personnel were first sent to the School for Military Government. The program was later enlarged to include "Civil Affairs Training Schools" located at several universities, which gave specialized training, including languages. The graduates of these schools received additional training at a civil affairs staging area before going overseas. Civil affairs staff sections were organized in advance for the purpose of planning, coordinating, and supervising civil affairs activities. Civil affairs operating groups or detachments were established to work under the military commander and carry out civil affairs functions, thus relieving combat commanders and troops of such duties.

When the School for Military Government was first established in Charlottesville, Virginia, in 1942, a rush of articles appeared in the press, some charging that the purpose of the school was to train "Gauleiters" to take over the government of the United States. Others, equally untrue, charged that starry-eyed dreamers were being trained to take "sweetness and light" to the aliens of Germany and Japan at the expense of the United States. Actually, the object of civil affairs control by military forces is to assist military operations. It has the objective of furthering national policies in accomplishing war objectives. Long range objectives must, of necessity, give way to the carrying out of the immediate military mission until the fighting is over. Then civilian agencies may take over more and more, relegating the military forces to the job of watch dog. An adroit handling of civil affairs will facilitate the pursuit of national policy and further a simple and easy transition from military government to control by civilian agencies.

The civil affairs objective of assisting military operations is achieved by maintaining order, promoting the security of the occupying forces, preventing interference with military operations, reducing active and passive sabotage, relieving combat troops of civil

administration, and mobilizing local resources.

The sole reason for the existence of separate civil affairs personnel, is to assist and advise the military commander in civil affairs and to relieve the other military forces of all possible burdens in controlling and exploiting local populations and resources. They are specialists, comparable to Signal, Engineer, or Ordnance Specialists and should be used accordingly. Any tactical commander who forgets this and fails to use his civil affairs staff and operating personnel to the fullest extent and in the most efficient way possible, is failing in his mission as a commander.

The terms "Civil Affairs Control," "Civil Affairs," and "Military Government" are often used interchangeably and somewhat loosely with resultant confusion. "Civil Affairs" is an all-inclusive term. It describes all activities on the part of the population of an occupied area, other than that of an organized military character. "Civil Affairs Control" is the supervision of the activities of civilians in an occupied area by an armed force, no matter what the means used in exercising that supervision. It may be "Military Government," it may not.

"Military Government" is a basic term and means the supreme authority exercised by an armed force over the lands, property, and the inhabitants of hostile territory. "Civil Affairs" includes "Civil Affairs Control" whether it be by "Military Government" or by some other means. "Civil Affairs Control" includes "Military Government." While "Military Government" is "Civil Affairs Control," "Civil Affairs Control" is not necessarily "Military Government." That is, a red snapper is most certainly a fish, but a fish is not necessarily a red snapper.

By an "occupied area" we mean territory not only physically occupied, whether by force or agreement, but where the occupying troops have, in fact, assumed supreme authority, substituting military authority for that of the previous government or sovereign. Sovereignty is not transferred by the occupation of territory and the assumption of rule

by the military force occupying it. That is left for the peace table. However, the military commander does have absolute control and authority, limited only by international law and the instructions and orders of his superiors. In practice, Civil Affairs Control in the territory of an ally, whose soil is being freed from the enemy, is usually exercised through the government of the ally and is not "Military Government" in the strict sense of the word. Its objective is to assist the ally in the control of his own country and it is customary to refer to it as "Civil Affairs Control" or perhaps, just as "Civil Affairs"—never as "Military Government." The theater commander, however, must have the authority to set up military government if it should become necessary. The term, "Military Government," is used to describe the means whereby civil affairs control is exercised in conquered enemy territory, such as in Italy, Germany, and Japan. "Civil Affairs Control," by means other than, "Military Government," was used in France, Belgium, The Netherlands, Denmark, Norway, and the Commonwealth of the Philippines.

Military government is a necessary consequence of waging war on hostile soil. The supreme military commander bears full responsibility for military government and, therefore, must be given full authority. Consequently, Theater Commanders are usually designated as the military governors of their theaters.

The Theater Commander's discretion, in the exercise of his authority in military government, is limited by War Department Directives and by International Law. The provisions of Field Manual 27-10, "Rules of Land Warfare," are mandatory. Field Manual 27-5, "United States Army and Navy Manual of Military Government and Civil Affairs," is a statement of principles which usage has proven to be sound. It is a guide, but not a directive. National political, fiscal, and economic policies are enunciated by the joint action of the several executive agencies and guide the theater commander and may limit his discretionary powers. In our govern-

ment, military power is subordinate to civil power and, while given a free hand in the winning of war and in carrying out all military operations, it does not set national policy.

In practice, however, military necessity usually dictates what shall and shall not be done in the theaters of operation. Military government exists by reason of military necessity and by right of military power. The Military Commander must have, and does have, great power. International Law recognizes this and allows him considerable latitude in meeting local conditions. Furthermore, International Law is often ambiguous and contradictory, and its provisions are more negative than positive. Although some things are definitely forbidden, few acts are positively ordered. Although just and reasonable treatment has been found to be more conducive to cooperation on the part of the inhabitants of occupied territory than unnecessarily harsh or cruel measures, the theater commander must be prepared to use his power to meet and forestall any lack of cooperation or actual overt acts on the part of a hostile population. Force may, and must, be used to the extent necessary to subdue those who resist military authority and to prevent the escape of persons suspected of crime. Prompt and fair trial is essential, with punishment proportionate to the offense. This acts as a deterrent on other possible offenders. Experience with a given population, as well as a study of its laws, customs, beliefs, and habits will indicate whether or not punishments should be carried out in public, and what types will be most effective. For example, General Pershing, in his control of the Moros in Mindanao, made use of the Mohammedan fear of contamination by pigs.

Since military occupation of enemy territory suspends the normal operation of civil government, the military commander must exercise its functions. While the most important duties of military government probably are the restoration and preservation of order, the prevention of epidemics and the control of black markets and inflation, military government must also see that public utilities are restored and controlled, as are

all other communications facilities—telephone, radio, postal, telegraph. Transportation facilities must be restored. Banks must be opened and supervised, public finance controlled and agriculture, manufacturing, public health, trade, fisheries, forestry, refugees and displaced persons, education, all must receive their share of control, supervision and aid.

Military government acts through indigenous officials. Usually, it is necessary to remove many political officials from office. This action may include the removal of the actual and nominal heads of the national government, cabinet ministers, and the heads of principal political divisions. So far as practicable, subordinate officials should be retained in their offices unless it is desirable to remove them because of membership in political or terroristic organizations such as the Nazi Party, the Black Dragon Society in Japan, or police organizations such as the German Gestapo or the Japanese Kempai Tai. Whenever it is necessary to remove native officials, they should be replaced by other natives who must be required to assume full responsibility for their assigned duties and to discharge them under the control and supervision of civil affairs personnel. These local officials include police to preserve order.

This use of local officials and police is necessary since there will not be enough military civil affairs personnel to do the work. Native officials may be reluctant to help and must be watched carefully to prevent active or passive sabotage and deliberate inefficiency. So, military government must be backed by military force, preferably by military police units attached to civil affairs operating groups or detachments. If military police units are not available, military government should be supported by tactical groups. In Italy the Carabinieri—nominally part of the Italian Army, actually a trained police force skilled in dealing with civilians, was used to preserve order, largely taking the place of military police. Tactical troops would have had to be withdrawn from combat if the Carabinieri had not been available or had failed to function satisfactorily. Willful failure of local

officials to perform their duties in a satisfactory manner is a serious offense against military government and punishment should be meted out accordingly. Also, it may be necessary to provide protection for persons who continue in, or are assigned to public office under military government.

Existing laws, customs, and governmental institutions, as well as old political boundaries and subdivisions should be retained to facilitate military government and avoid confusion unless there is reason to the contrary. The people of the area are familiar with their own civil organization, laws, and customs and it is unwise to impose others upon them unless the original customs conflict with the aims of the occupying forces and are inimical to their best interests. Laws and customs, however, which are repugnant to good morals, to civilization, or which permit religious or racial persecution should be immediately terminated. Religious freedom must be allowed except where religious activities serve as a cloak for subversive activities or breed disorder. Persons who have been imprisoned for political, religious, or racial reasons only, should be released after investigation with warning that political activity on their part during the period of military government will not be tolerated.

Military government announces its existence by proclamation, but this is a matter of custom, not legal necessity. It begins when the point of the advance guard forces the first civilian off the road, and continues as long as military occupation lasts or until government is taken over by some civilian agency.

Prompt action must be taken to punish acts against military government and military courts are set up to try such offenses. Ordinances should be posted from time to time informing the civilian population what it will do and what it will not do, and to set forth penalties for disobedience. As a matter of practical procedure, proclamations and ordinances should not be verbose.

Minor offenses are usually tried by Provost Courts having powers similar to police courts

in civil law or to Summary and Special Courts-Martial in the Army. They should have sufficient power to control and deter the more common and less serious type of offense. The composition, authority, number, jurisdiction, and procedure of any military court is set by the theater commander in the directives establishing them. Provost Courts may be given the power to levy a fine of five thousand dollars and to sentence the offender to confinement for a period of five years. This power might well be doubled if the theater commander sees fit, because Provost Courts are on the ground, know local conditions, have immediate access to and control over witnesses, and can act more promptly than any other court. Prompt trial and prompt punishment is the best deterrent to crime and for this reason Provost Courts are especially effective if they have sufficient prestige and power.

More serious offenses against military government are tried before military commissions which are given the power of imposing the death penalty. During tactical action it is effective to delegate to all commanders having general courts-martial jurisdiction, the power of appointing military government courts, with the power of imposing the death penalty. This gives the division commander power to meet acts of sabotage, murder, or espionage by the local civilian population immediately and effectively.

In addition to the two types of military courts mentioned, a third or intermediate court may be set up as was done by General Eisenhower in Germany. He directed that three types of military courts be constituted: "(a) General Military Courts consisting of not less than three officers, of whom at least one shall be a lawyer serving in Military Government, (b) Intermediate Military Courts consisting of one or more officers, of whom at least one shall be a lawyer serving in Military Government and, (c) Summary Courts consisting of one officer, who shall be a lawyer serving in Military Government, if available."

The civil courts of the occupied area may be allowed to function from the first day of

occupation or may be reconstituted later. They will be supervised by the legal section of Military Government. All offenses committed by natives not directed against Military Government or our forces, and all litigation between civilians under their own laws will ordinarily be tried before native courts. Members of the armed forces come under the jurisdiction of courts-martial which are of no concern to civil affairs military government officers as such. Any legal cases involving our nationals or those of our allies will be tried before military government courts, not native courts.

There are two types of organization for detailed civil affairs (MG) planning: territorial and operational. In the territorial type of organization, the civil affairs (MG) chain of command is independent of military commanders below the level of the theater commander. It by-passes the communications zone, communications zone section, army, corps, and division commanders. There are many arguments in favor of organizing civil affairs (MG) under a territorial system. First, military commanders and the bulk of their staffs are untrained in civil affairs (MG) and are apt to overlook the importance of this function. Second, the magnitude of civil affairs (MG) is too great a burden to add to a staff already fully occupied with tactical considerations. Third, combat units are subject to frequent movements, which would result in frequent changes of civil affairs (MG) personnel in a given area, thereby destroying continuity of operation and causing frequent variations in policy. Fourth, it is only by accident that native political boundaries coincide with tactical boundaries; consequently, either a single civil affairs (MG) officer will have to deal with officials from several different civil units, such as cities or counties, or, one civil affairs (MG) officer will have to take orders from more than one military commander. The weakness of this system is obvious. The tactical commander is denied authority and consequently cannot be held responsible. The organization first used in North Africa and in Italy was of the territorial type. Despite definite weak-

nesses, the system did work satisfactorily, partly because the Arabs were glad to see the Italians leave, and the Italians, in turn, were glad to have the Germans go.

The operational type of organization is characterized by vesting full responsibility and complete authority for civil affairs control in the military commanders. Here the chain of command for civil affairs control is the same as the operational chain of command. This insures that all activities, including the relations between troops and inhabitants within the zone concerned, will be fully coordinated in support of the military operations of the commander. It obviates possible friction and misunderstandings which are apt to arise when two officers, having overlapping responsibilities, are mutually independent. It hopes to prevent fumbling and buck-passing.

Experience has shown that during the tactical phase of military operations, the operational type of civil affairs organization is the most efficient and should be used. With stability and consolidation some features of the territorial type may be incorporated, the system changing progressively from the operational organization to one having features of both types. After the cessation of hostilities, the territorial type may be used to pave the way for the transition from military government (MG) to control by civilian agencies.

Whenever possible, old political boundaries should be used to simplify administration and indigenous officials and police agencies retained. The heads of local civil government agencies should not be under the orders of two or more military commanders or conflict and confusion will result. This may occur if the political subdivision lies within the zone of more than one military commander. It probably will not be possible to retain old political boundaries ahead of army service areas and often will not be possible ahead of the communications zone. In Western Europe, boundaries down to Corps and Divisions were adjusted when at all possible to meet these principles. In the communications zone, the civil affairs (MG) chain of command will



probably be separate within its component sections.

In organizing civil affairs (MG) personnel, two types of personnel and organization are needed; staff and operational. Staff sections may be organized on the general staff level as was done in Europe, the G-5 section being the civil affairs (MG) section, or on a special staff level, as was the practice in the Pacific. The arguments advanced in favor of a general staff level organization are that it increases efficiency to have civil affairs (MG) on the coordinating level, as this enables the civil affairs (MG) staff officer to know better what is going on; that he will be listened to more readily; and can thus better effect coordination. Arguments for having the civil affairs (MG) section on a special staff level are: that there must be a special staff section for civil affairs anyway to do the operational work, this section being composed of such specialists as legal affairs experts, medical experts, public safety experts, etc. and; that it is more efficient to have G-1 do the coordinating and the senior civil affairs (MG) officer do the operating with the help of his experts, as civil affairs (MG) specialists generally do not have sufficient staff training to function efficiently as general staff officers.

The important thing is to keep the mission of a civil affairs (MG) staff section clearly in mind. That mission is to advise the commander on all civil affairs (MG) matters, to prepare the civil affairs (MG) paragraph of administrative orders, to prepare civil affairs (MG) annexes and orders in the communications zone and, as directed by the commander, to supervise and coordinate the activities of operational personnel within the zone of the commander. Civil affairs (MG) staff section, whether organized on general or special staff levels, should exist in theater staffs, communications zone staffs, as well as on the staffs of various communications zone sections, the staffs of army groups, armies, corps, and divisions. These staff sections are a permanent part of the unit to which assigned and should accompany the unit wherever it goes.

Operational civil affairs (MG) personnel

is organized by the theater commander in groups or detachments to do the necessary work of on-the-ground operations. Civil affairs (MG) detachments or groups must be sent forward and begin functioning as soon as possible. This should be as soon as small-arms fire has ceased falling on the area but while the area is still subject to artillery fire. Civil affairs (MG) groups must find and guard all enemy supplies, civilian as well as military, saving them for later use. If this is not done, natives may loot, our own troops may needlessly destroy food, rice for example, not caring to eat it themselves, livestock may be needlessly killed, thus destroying supplies which may be desperately needed later to be doled out to the civilian population. Tactical troops may have to assist in these functions. Civil affairs functions include keeping the roads clear for combat troops, segregating civilians, and carrying out the activities already described.

In figuring the size of the civil affairs (MG) groups or detachments needed, a number of factors must be considered: first, how many civil affairs (MG) personnel are available for the locality; second, what its population is. Then there are other factors; the military situation, the attitude of the people, their habits and customs, economics, geography, availability and reliability of the native officials, training and ability of other natives who might be used as officials and police, health conditions, and all other things that enter into the theater commander's planning. It will never be possible to divide the population by the number of civil affairs (MG) officers available and, presto, place one officer to thirty thousand natives.

To begin with, there should never be less than two officers in any civil affairs (MG) detachment. It is obvious what would happen if there were only one and he became ill or unable to fulfill his duties.

Rural populations must be taken into consideration but do not need separate civil affairs (MG) personnel. Experience has shown that for every four civil affairs (MG) officers needed in cities, only one is needed

for rural communities, and by rural communities, towns and villages are meant as well as isolated farms. Detachments must be kept as small as possible and over-specialization avoided. The detachment or group for the city is made large enough to care for the rural population of its surrounding area which can be controlled by patrolling and inspection. Small detachments consist primarily of "general administrators," who are resourceful persons of the jack-of-all-trades type and can meet emergencies with practical good sense, calling upon the specialists in higher echelons for technical advice and aid as needed. In larger cities and on provincial or prefectural levels as well as on army and theater staffs, specialists will be needed and their technical knowledge must be made immediately available on call to the civil affairs (MG) officers of the general administrative type who operate on lower levels.

Ideally, the needed civil affairs (MG) detachments are pin-pointed—are organized to meet the requirements of the specific locality, are held in readiness and at appropriate times attached to divisions with the provisions that these detachments will remain permanently in the geographical location to which they are assigned as long as military government or civil control is continued. There may be adjustments made, personnel added or taken away, but operational units should be permanently assigned to the place and not to the unit. The unit is under the absolute and complete control of the military commander as long as it is in his area, but as fighting continues and front lines advance, the civil affairs detachment may, and will, find itself passing from the Division area to that of corps, from Corps to Army, and finally, to communications zone. As this procedure evolves, the civil affairs (MG) detachment of a city may find itself in the same tactical areas as the detachment at the provincial capital and, as soon as this happens, the subordinate group should now come under the control of the higher group, both being under the command of the same tactical commander or area commander. As front lines

progress and original civil affairs (MG) groups or detachments are left behind in their permanent locations, new groups must be provided to take over in newly occupied territory, the process being repeated, until occupation is complete.

It is fairly obvious, of course, that if the enemy advances instead of our troops, the civil affairs (MG) detachment may find itself passing from the control of division, not to corps, but to the enemy and to billets in an enemy prison camp.

While the above, theoretically, is considered to be the most efficient way of organizing for civil affairs control and military government, it has not always been followed in the theaters. While theater commanders have found it to be the most efficient in the communications zone, they have preferred other methods in the combat zone.

The following are some examples of various procedures used in different theaters. In Italy "AMGOT," "Allied Military Government of Occupied Territories," later known as "AMG," "Allied Military Government," had a chain of command in the communications zone through provincial and regional civil affairs officers direct to theater level, by-passing the Commanding-General of the Communications Zone and the commanders of its sections. This led to friction and inefficiency. For example, when a typhus epidemic developed among the civilian population of Naples, both the senior civil affairs (MG) officer and the communications zone commander claimed jurisdiction. As a result of this dispute, it was necessary for a third agency to come into the picture. Because of this confusion, the epidemic was probably more severe than it would have been otherwise.

In Western Europe "spearhead" detachments were tried, in some instances, in advance of permanent detachments. This led to loss of continuity in policy and control, as time is seldom available for a complete turnover of information and ideas from the one to the other; nor is this humanly possible, even though there be ample time. Also, the officials appointed by one civil affairs officer

may not be to the liking of another, his ordinances and rules may be disliked by the new, as may be his policies in general. Any such changes as the new group may make due to personal reasons, may prove confusing to the civilian population and possibly lead to a loss of prestige on the part of local military governments. The final solution was to assign permanently civil affairs operating detachments as well as staff sections to combat units, and for them to advance when the combat unit advanced. The advantages of having the tactical commander thoroughly know and trust his civil affairs operational personnel, as well as his staff sections, was felt to more than compensate for the admitted disadvantages from the standpoint of the civilian population.

In the Philippines, all civil affairs operating units were originally of the same size and organization, with identical equipment. Planning was careful and complete and functioning excellent. It was found necessary, however, to break up some of the detachments later, to obtain greater dispersion. This is difficult to do unless the table of equipment is suitable for such division into smaller detachments. Similar results might be obtained by organizing minimum size units, organized and equipped to permit efficient combining of two or more into larger units of the size needed. This method fails to meet the need for specialists that arises after groups reach a certain size.

In Okinawa "spearhead" detachments were again used. These "spearhead" detachments also served as division staff sections. These "teams" were organized into various sizes to meet various needs. "A" teams consisted of four officers and eleven enlisted men, "B" teams of eight officers and nineteen enlisted men, "C" teams of ten officers and twenty-six enlisted men, and, "D" teams of twenty-two officers and sixty enlisted men. "A" teams were commonly attached to divisions. They were charged with the conduct of Military Government reconnaissance, assistance in the control of civilians, the establishment of civilian collecting points, the posting of proclamations and the issue of relief supplies.

"B" teams were given the mission of taking over from "A" teams as the division advanced and of continuing their work; the "B" teams to remain permanently in place, "A" teams to continue with the division as it advanced and to be continually relieved by new "B" teams as needed.

The task of "C" teams was to set up and operate civilian concentration camps as needed, each team being capable of operating a camp of ten thousand capacity. "D" district teams were for the purpose of administering whole districts or areas, controlling all civil affairs teams within the district concerned.

Actually, in practice, the "A" teams were usually split into sections, one remaining at division headquarters and functioning as a staff section, the other being attached to the infantry regiments or combat teams and performing staff functions and the collecting of civilians. "B" teams, instead of taking over from the "A" teams, generally took over from the start the area to which they were to be assigned permanently.

In Okinawa, the main function of civil affairs proved to be disaster relief, and its predominant problem was that of supply. As far as local civil government was concerned, it simply had ceased to exist, conditions being completely chaotic.

Tables of organization and equipment now exist in tentative form for a "Headquarters and Headquarters Detachment, Military Government Group" (T/O&E 20-52T), and for a "Military Government Headquarters and Headquarters Company" (T/O&E 20-56T).

Whatever the definitions and names used: "Civil Affairs," "Civil Affairs Control," or "Military Government"; whatever the organization; whatever the use; one thing must always be kept clear. The reason for having specially selected and trained civil affairs personnel separately organized, is to aid in winning the war and in preserving the peace. It is the duty of every member of the Military and Naval establishments, in so far as it lies within his power, to contribute his share to the careful selection, proper training, and, above all, to the full and efficient use of civil affairs personnel.

# Strategic Logistical Planning

COLONEL G. O. N. LODOEN, *General Staff Corps*

**W**HAT is Strategic Logistical Planning? From my own experience in logistical planning the following concept is presented; it is the art of long range planning from the standpoint of time, long distance from the linear standpoint for the concentration, movement, and supply by land, sea, or air lines of communication of troops, their transport and supplies on a large scale.

To the Army Service Forces, which, through its technical services procures all supplies used by the Army throughout the world, except those peculiar to the Army Air Forces, advanced planning is of tremendous importance when one considers the lead-time in the procurement. By lead-time is meant the length of time it takes to procure equipment and have it available ready for issue at our depots. To this, then, must be added the time to transport it to the ports for overseas shipment, the loading time involved, and then the time element for arrival at its final overseas destination. Many items of heavy equipment take eighteen months or more. The bulk of the major Ordnance items runs approximately nine months. Therefore, if an operation is to take place three or four months from now, planning would have to have been accomplished quite some time in advance in order to meet requirements.

In order to provide for the necessary advanced planning, the Army Service Forces has set up in the Planning Division, the Strategic Logistics Branch. This branch is primarily concerned with the logistical implications of future operations and their requirements, and the transmission of strategic guidance to the staffs and technical services of the Army Service Forces.

In order to obtain necessary information to determine future requirements, the Strategic Logistics Branch maintains close liaison with the subordinate agencies of the Joint Chiefs of Staffs and with the Operations Division, War Department General Staff. From these agencies the necessary guidance is secured from which to prepare logistic

studies which can be used for preparing War Department projects for projected operations, or these studies can be used in assisting in determining the feasibility or non-feasibility of projected operations.

Guidance for determining normal equipment and supply required by the Army is largely based on the troop basis and the troop deployment published by the War Department, which shows the strength of our forces in various theaters by periods, thus enabling the technical services to determine the amount or different types of Class II or other unit equipment required. For example, from the troop deployment the Chief of Engineers has the necessary information showing the strength of forces in the tropical areas of the Pacific and can thereby make a sound estimate of tropical type equipment required. Based on experience in the various theaters, the technical services are also able to set up a replacement factor for the types of supplies furnished. From the troop deployment the requirement for Arctic equipment can also be determined based on the strength of the forces in the areas of Arctic climate.

Special projects are developed to determine the War Department requirements over and above that provided by the normal Tables of Basic Allowances and Equipment. These projects cover generally Class IV equipment and supplies such as construction materials and additional transportation required to augment organic transportation in order to maintain the required supply over the land lines of communication.

In preparing studies to facilitate the logistic planning, there are any number of forms that might be used. The following is a form which, though not applicable to all types of logistic studies or plans, can be used to serve as a check list and as a basis for other studies.

*Assumptions.*—Conditions under which the problem is to be worked should be definitely settled before proceeding with the study.

For example, prior to the defeat of Germany the assumption with respect to a target date in conducting a major operation in the Pacific would be of material importance. With a target date as early as 1 May 1945 we would probably experience considerable difficulty in assembling troops and supplies for a major operation, whereas a target date of 1 September 1945 would make a much easier condition with respect to availability of critical items, a situation which was improved as time went along. A change in the assumption requires a change in your study and might even result in a completely new one. Assumptions concerning adjacent areas, enemy forces and their reaction to attack, and operations of Allied forces should also be included.

*Nature of the Operation.*—A brief plan should be given; the tactical details are relatively unimportant, but the scale of assault is, and phasing, particularly with respect to seizing vital line of communications facilities.

*Troops Required and their Availability.*—Experience has shown that detailed computations are unnecessary—the overall strength should be broken down into the three components, i.e., the Army Ground Forces, the Army Air Forces, and the Army Service Forces. The number of divisions and air groups should be indicated as well as other major support units such as additional artillery, tank battalions, antiaircraft battalions, amphibious battalions. The size of the assault forces should be given and the rate of build-up. A summary of the headquarters to be established for ground, air, and base sections is provided to aid in Signal net and Engineer construction computations. A divisional slice (overall strength) for assault and subsequent build-up must be determined.

*The Logistic Plan to support the Operation.*—This should cover such things as mounting areas, beach operational data, the ports, rails, and roads to be used to determine the amount of restoration and reconstruction and capacities required, airfield restoration or new construction, the supply plan and policy showing method of supply before, during, and after the assault phase, evacua-

tion, and construction phasing and policy for scales of accommodation.

*The Capacity of the Lines of Communication to support the Logistical Plan.*—It is necessary to analyze each logistic means. Pertinent factors are:

a. *Ports.*—A consideration of the import capacity of a port vs. its clearance capacity so as to determine which is the controlling factor. The peacetime capacity of a hostile occupied port is valuable only as a guide to the estimated capability. This capability, in turn, must be weighed against the management and equipment to be made available by the occupying forces. The study should include the percentage capability of the port during the progressive period of occupation. The peacetime capacity is used as the basis for the computations. The following factors are representative of average conditions for planning purposes:

D to D+30	25% of peacetime capacity
D+30 to D+60	50% of peacetime capacity
After D+60	100% of peacetime capacity (unless particularly adverse conditions are expected)

It is necessary to analyze the potential capacity of the ports. Take a large continental port, for example (see Figure 1). The normal peacetime capacity was around 6-7,000 tons a day. On that basis, by D+30 the restored capacity should be about 2,000 tons, but it was D+40 before they were able to get 2,000 tons per day through this port. However, by D+60 there were 7,000 tons per day being discharged, due to the augmentation the Engineers were able to make. Later the actual tonnage exceeded the initial planned capacity by almost 100%.

The Germans learned from their experience in Naples not to sink their ships alongside the dock over which we could bridge and dock the ships coming in. Their subsequent damage was generally in the form of blocking entrances to channels and canals which required a great deal of time to re-



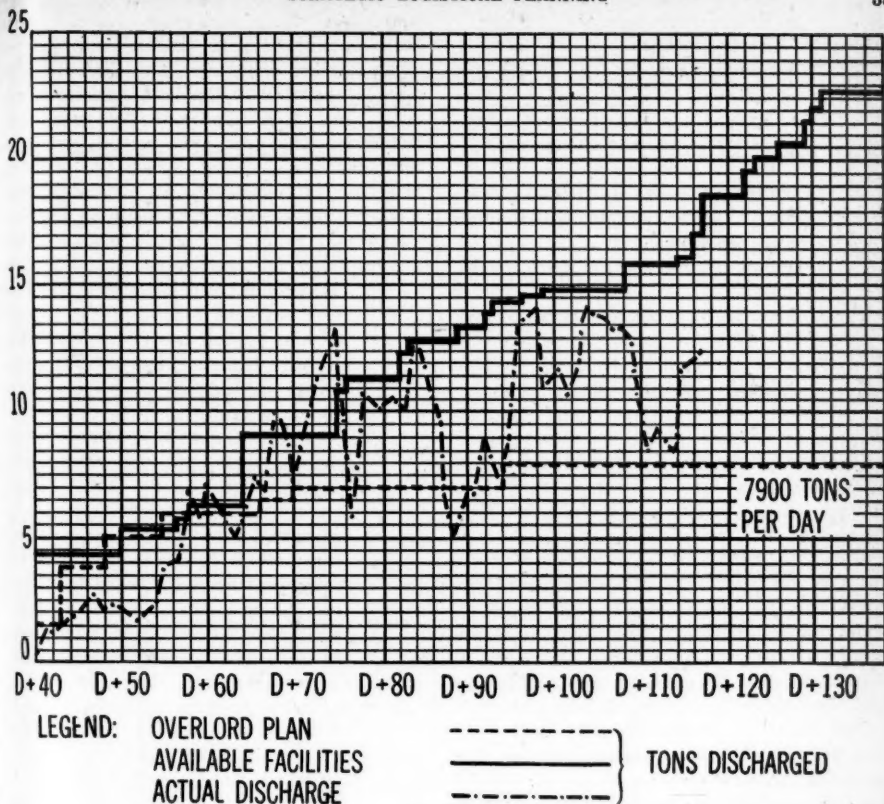


Figure 1.

move. An example of this is Marseille, where pre-war capacity was 50,000 tons per day and channel blocking reduced that to 4,000 tons. They were able to restore the capacity to 17 or 18,000 tons a day in about two months after the port was captured.

The chart (Figure 2) shows a method for developing the capacity and the estimated cargo discharge required in long tons per twenty hour days for support of fourteen divisions in assault and a six-division buildup between D+30 and D+60.

b. *Railroads.*—Factors to take into consideration are: known peacetime capability, assumed demolition, percentage of capability at successive periods, troops required to condition and maintain, rate of rehabilitation

progress for track, maintenance of way, signal, water, and repair systems, availability and condition of motive power and rolling stock. Can foreign cars use the tracks without impaired clearance at bridges and tunnels? The density and type of bridges per track mile is the controlling factor in determining the rate of rehabilitation progress.

For example, in the Rhone Valley from Marseille to Toulon to Belforte, the requirements would be based on ninety-three bridges (average length twenty-five yards) in a track distance of 117 miles using the following factors:

1. Main line track replacement: 10% running rails and accessories.
2. Average length of bridge: 75 feet

- a. Bridge replacement: 30%
- b. Bridge repairs: 30%
- 3. Minimum turnouts will be required as follows:
  - a. Two at each junction.
  - b. Ten at each marshaling yard.
  - c. One at each station.
- 4. Water pumping stations for locomotive water supply will require 50% replacement.
- 5. Repair shops will be 10% operational.
- 6. American locomotives required will be 100% for initial operation.
- 7. American rolling stock will be 70% of total requirements.

c. *Waterways.*—Factors similar to railways must be taken into consideration. Again bridges and locks are the controlling factor. How many are there? What is their percentage of destruction? How fast can they be cleared for traffic?

d. *Air Transport.*—Controlling factors in Air Transport are the operational capacity of the particular type of plane by squadron or other unit, gas capacity of the planes, range, width of doors, navigational equipment, and the climatic and topographical conditions in the particular area.

*The Hostile Logistical Plan to oppose the Operation.*—This plan should indicate the probable logistical plan for enemy forces and indicate critical points, destruction of which would cause the most serious effect on the enemy plan.

*Capabilities of the Lines of Communication to support the Hostile Plan.*—Considerations similar to those employed for the friendly lines of communication pertain to this subject.

*Shipping Implications.*—The shipping implications include two distinct categories—personnel shipping and cargo shipping. It would be very unusual that sufficient shipping could not be made available for a task force. However, the factor to be considered is—if this shipping is made available *what will be the cost to other theaters?*

*Supply Implications.*—The supply implications, in general, focus about the special

equipment which comprises critical items such as Signal Corps stocks, certain types of amphibious equipment, and Class IV supplies above T/BA [Table of Basic Allowances] and T/E [Table of Equipment] allotments. The fact that certain types of equipment do not exist during the planning stage is not necessarily an indication that the operation should not be mounted. Possible methods of relief are always present when the following are considered:

1. What substitute equipment may be used without hindering the success of the operation? There is always the fine but practical distinction between desirability and essentiality to be carefully considered.
2. Although the item is currently deficient, what will the actual production figure make available by the time that the operation is to be mounted? It is desired to point out that actual production figures are indicated because there are two production figures; one is the theoretical or programmed, which may or may not be met in an overall period of time; the other is the actual production figures which may definitely show a serious shortage at the time the operation is to be mounted. The fact that deficiencies will be made up after the date for mounting the operation is of only academic interest from the viewpoint of the particular operation.

*Conclusions.*—The conclusions should set forth a definite statement that the project is logistically sound or unsound; they should include the important factors that were developed during the study; and while brief, they must not confuse clarity with brevity. The conclusions must be sufficiently extensive so that the import of the study can be understood without a complete reading of the study and its appendices. The body of the study is for those interested in the detail but not for those interested only in the decision.

*Recommendations or Alternative Suggestions.*—As previously brought out, one should

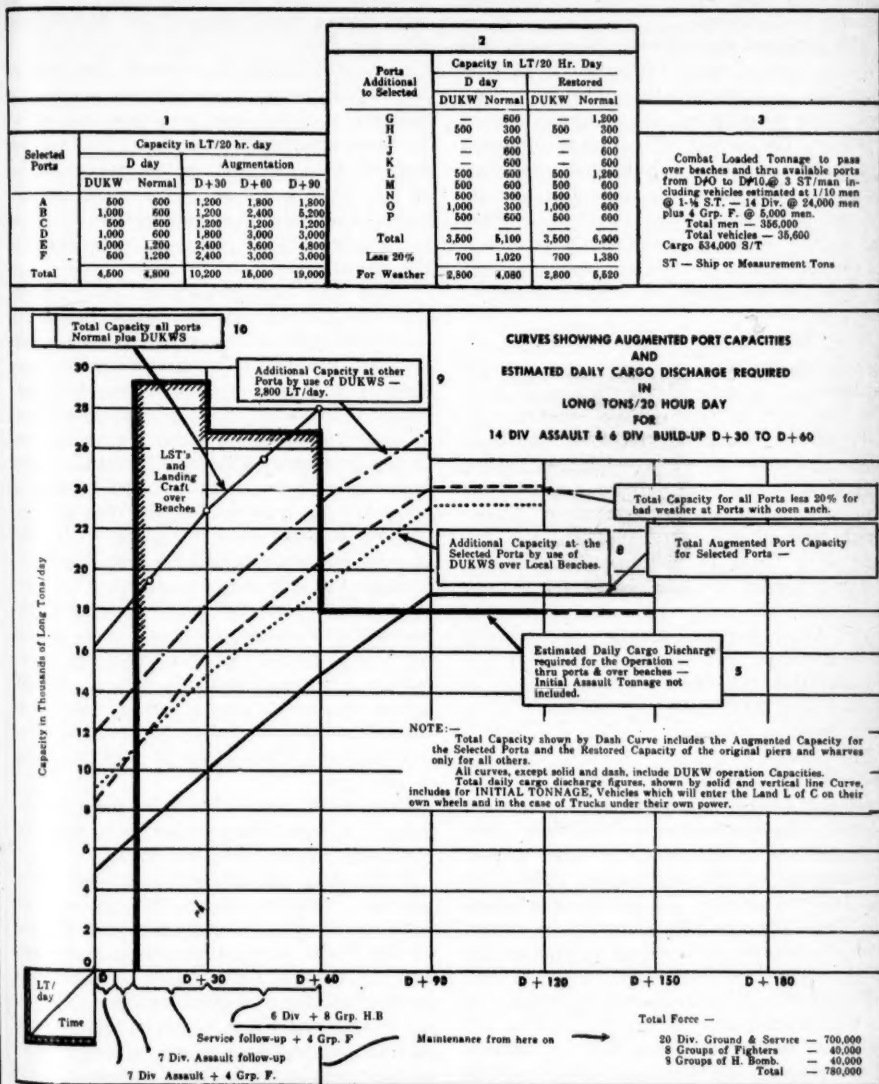


Figure 2.

not hesitate to present suggestions which it is believed may relieve some of the deficiencies in the plan.

The logistical study having been made and the conclusions being favorable, it is then necessary to determine the actual quantities and types of supplies and equipment to be required. The extent of coverage of items is a matter of choice but the minimum computations must cover the controlled and restricted items, i.e., those in short or critical supply or being newly developed. These detailed bills of materials are based on project descriptions known as War Department Prepared Projects.

*War Department Prepared Projects.*—A logistic study of a projected operation is implemented by determining the special projects that will be required, i.e., construction material for restoration of ports and railroads, warehousing, hospitalization, shops, additional motor transport to augment organic transportation in maintaining proper supply and other special equipment for supplies of a Class IV nature. The provision of these special projects should not be confused with the equipment which Tables of Basic Allowance and Equipment normally furnish troops; however, they do take into consideration the SLOE's [Special Lists of Equipment] that have been provided troop units in some theaters.

The Strategic Logistics Branch, Planning Division, Headquarters Army Service Forces, developed a form of project descriptions for use in a logistic study to enable the technical services to determine for each project the supplies and the equipment which they will have to procure for future operational use. These are generally planned to be phased from six months to eighteen months in the future. These projects cover other than normal operational requirements and, based on the assumption and outline included in the logistical study, the completed descriptions of the projects are developed along the following lines:

(1) Project 1—Ports:

(a) Repair, restoration and improvement of three ports located at . . . . These

blanks are filled in with port names and the end of the description might look like this: "to a total capacity of 25,000 long tons per day."

(b) Similarly, "repair, restoration and improvement of two additional ports to a capacity of 5,000 long tons per day each." To these statements must be added the time element because that is an augmentation of the other ports that you want and indicates the phasing of construction required to implement port capacity in support of the operation.

(2) The next project is "Warehouses" and you go through the same procedure, show the type of warehouses to be constructed, whether it is the theater of operation type, a local type, or a type developed within the theater itself. A local type means of native materials or designs such as used in the Southwest Pacific. The requirements for open storage areas are spelled out as necessary to provide for the proper proportion of sixty days of Class I, II, and IV supplies for, say, 600,000 men. Similarly, it states the necessary facilities for 120 days of ammunition storage will be provided. The proportion of closed, shed, and open storage required is then determined from experience factors. These requirements vary in the different theaters of operations depending on climatic conditions and on the proportion of usable space it is estimated will be found in the area.

Each other project is set up in a similar manner and the blanks filled in to meet the conditions of the logistical study.

When these projects are presented to the technical services, since they include the level of supply, the strength and phasing of the forces under the various conditions, and the general areas to be occupied, we have given the technical services sufficient information on which to apply their experience factors and form a base for computation of their requirements. They in turn prepare enlarged and detailed descriptions with bills of materials and equipment for critical items for each project.

It is necessary that quite a number of

items be covered—shops, refrigeration, tent camps, housing, hospitals, laundries, special water supply and utilities, roads, railways, airfields, petroleum distribution, prisoner of war enclosures, field fortifications, fire-fighting equipment, forestry equipment including necessary logging and sawmills, and special operational supplies including Class IV requirements for beach operations and other assault phases. In order to provide the information concerning the availability of local resources, an economic study is sometimes necessary so that an estimate can be prepared of the type of logging and sawmill equipment required, tactical bridging, field fortifications, warehousing or other buildings expected to be available locally. Since a complete economic study would be too voluminous for inclusion in the logistical study it will ordinarily only cover the principal items of local resources and contain a bibliography of all known intelligence sources from which the technical services can evaluate and make their own estimates of the amount of local material and facilities that will be available.

The evaluation of technical intelligence includes detailed study of aerial photography to determine the percentage of destruction from aerial bombardment, to amplify information on bridging and bridge destruction, which may or may not be fully evident from intelligence sources, and to provide a means for up-to-date correction of maps used in planning.

A project covering special services is included and covers "reconstruction of facilities and provisions for breweries and bottling works to provide beer and soft drinks for 100,000 men." That may sound funny, but it is a fact established in every theater, and you have to provide for it.

The project "Special Operational Requirements" must be based on knowledge of the area that you are going into and on a brief of the tactical plan. Are you going into an area over beaches where there will be rice paddies as soon as you get away from the beaches? If so, what type of vehicle do you need to clear the equipment and supplies from the beaches if you don't have roads?

What are the weather conditions? Are you going to require cold weather equipment? Snow removal equipment? How about the soil and lubricants and anti-freeze to meet weather conditions? What are the probable conditions affecting the operation which would require extra equipment such as caused by excessive rain, snow, and mud? What are the requirements for explosives, materials handling equipment, and special seacoast defense demolition requirements going to be? All of these items must be evaluated and the necessary supplies and equipment included in the bills of materials for this project.

Since more than one technical service is involved in the computation of requirements for many of the projects, the correlating agencies are indicated at the end of the project list. This shows, for example, that the Corps of Engineers will have to correlate or coordinate the projects in which they have the primary interest, since they involve engineer construction effort, but the requirements for which may come from two or three other technical services. In other words, anything that requires construction of a plant or facility, that must be correlated by the Engineer with the other technical services concerned.

There are other special requirements which may not appear in these projects since they are primarily Class II in nature. One of these is the matter of clothing. The Quartermaster, having had a great deal of experience in this line, normally keeps clothing requirements under continuous study and determines requirements based on the total strength of the Army and where the operations are going to be conducted. They habitually set up the requirements for Arctic clothing, ordinary temperate weather clothing, and tropical clothing. The matter of having on hand sufficient Arctic clothing or other clothing of a special type is under continuous consideration and is, therefore, not included in project requirements.

In developing the logistic plan for the project, of course, we must consider our ship-



ping capabilities. Here, again, you have to look to the Transportation Corps which, in turn, working with the Navy, determines the shipping requirements and the shipping availability based on experience factors. Five measurement tons (MT) per man for initial shipment of equipment and 0.8 measurement tons per man per month for replenishment thereafter are the factors most commonly used. For the first three months after the start of an operation a factor of 1.6/MT/Man/Month can be used, to insure computation of sufficient port capacity and shipping availability to build up the depot level in the operational area. These data usually appear in a Transportation Corps project description covering ports. Likewise, the Office, Chief of Engineers, coordinates with the Navy Bureau of Yards and Docks to determine the overall base development plans and harbor facility plans which the Navy may be contemplating in the operational area. If the Navy is constructing certain wharves, piers, or large ammunition storage areas, the Engineer layout will be coordinated to prevent interference and duplication of

effort or requirements. (Note: This applies to planning for base developments.)

There is one additional phase, a difficult one, to a completed logistical plan or project. That is the determination by the technical service of the troop requirements to accomplish the operation. Troop selections which are actually made by the theater commander directed to accomplish the operation will rarely ever agree with the long-range plan in detail. However, they will be sufficiently accurate to indicate troop requirements. In analyzing the troop requirements submitted by the technical services, the staff must be constantly alert for evidence of "Empire Building" or disregard of known data contained in the troop basis projections.

These are the things which must be accomplished in developing a complete strategic logistical plan and supporting projects before coming to your final conclusion that the operation can or cannot be successfully supported. The decision, of course, will have to rest elsewhere, but you must present the facts as you have them, evaluated to the best of your ability and judgment.

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We are not sure of the war of the future. We hope there will not be one. Prudence, in fact our national existence, dictates that we prepare for such a conflict. We can be sure that it will be unlike World War II. The role of air, sea, and ground forces will probably be materially changed. Still all are of the opinion that there must be unity of command in their employment. On the other hand the same services must be provided no matter what may be the employment of the combat arms. All will continue to eat, be subject to wounds, accidents and disease, all will require food and clothing, transportation. All the multitude of personnel services will be needed and probably increased. It is certain also that the present duplications and waste can be minimized by a frank recognition of the present situation and by a consolidation of these complex activities reaching not only into all field operations but into the very heart of our national life and of our fundamental capacity to wage war. If unity of command in the field is indicated by our experience in this war, unification of services in a single service force is demonstrably far more essential.

*General Brehon Somervell*

# Sixth Army Quartermaster Operations in the Luzon Campaign

From an official report of the Sixth Army Quartermaster activities by  
BRIGADIER GENERAL C. R. LEHNER, *Quartermaster Corps*

THE essential facts of Quartermaster activities and accomplishments in the Luzon operation, from the initial landing on S-day, 9 January 1945 through the official closing date of the campaign, 4 July 1945, are presented in three major sections: Planning, Operations, and Lessons Learned.

The following information on USASOS (United States Army Service of Supply) units which coordinated logistically with Sixth Army supply services during the campaign, is furnished to clarify specific references.

Shortly after S-day a provisional USASOS unit under Sixth Army control disembarked at Lingayen Gulf (see Map). This force, known as ASCOM (Army Service Command), was under Major General Hugh J. Casey and contained general and special staff sections. On 13 February 1945, ASCOM left Sixth Army control and became known as LUBSEC (Luzon Base Section). On 20 April 1945 the designation LUBSEC was changed to PHIBSEC (Philippine Base Section). Under each of its appellations this agency furnished USASOS support to Sixth Army throughout the operation, establishing three bases: Base M at San Fabian, Pangasinan, on 11 January 1945; Base X at Manila on 29 January 1945 (Manila was not, however, designated Base X until 20 April 1945); and Base R at Batangas on 20 April 1945. (See Map.) On 7 June 1945, USASOS was officially redesignated AFWESPAC (Army Forces Western Pacific).

## Planning

Planning of the Quartermaster functions for the operation involved three major factors:

1. Operation and Logistic Instructions from GHQ.
2. The Quartermaster Plan for Operations on the Far Shore.
3. The determination of requirements of Quartermaster supplies and equipment.

As had been the case in the K-2 (Leyte,

P.I.) Operation, ASCOM was attached to Headquarters Sixth Army for the purpose of insuring continuity of supply operations at such time as the Army Service Area should be established and major units (corps, divisions, and RCT's) should be relieved of responsibility for discharge of shipping and the operation of supply installation in the base area. ASCOM was charged with logistical planning and support in conjunction with the Sixth Army Staff, and with the development of a USASOS base in the Lingayen Gulf area.

## Operation and Logistic Instructions.—

Operation and logistic instructions from GHQ supplied the basic data for planning, and assigned responsibilities as follows:

a. The initial strength of the troops landing in the Lingayen Gulf area for whom Quartermaster supplies and services were to be furnished was 160,000 with a projected increase to 210,000 by S+18 and 282,000 by S+45.

b. Quartermaster supply and service were to be accomplished by the Army Quartermaster through the Quartermasters of the Army Service Command, the I Corps, the XIV Corps, participating divisions and RCT's, and by liaison with attached Air Force Service Commands.

c. USASOS was to provide all Quartermaster supplies; deliver them afloat, loaded for selective discharge, to Sixth Army regulating stations; and move them to the objective area as scheduled by the Army Quartermaster.

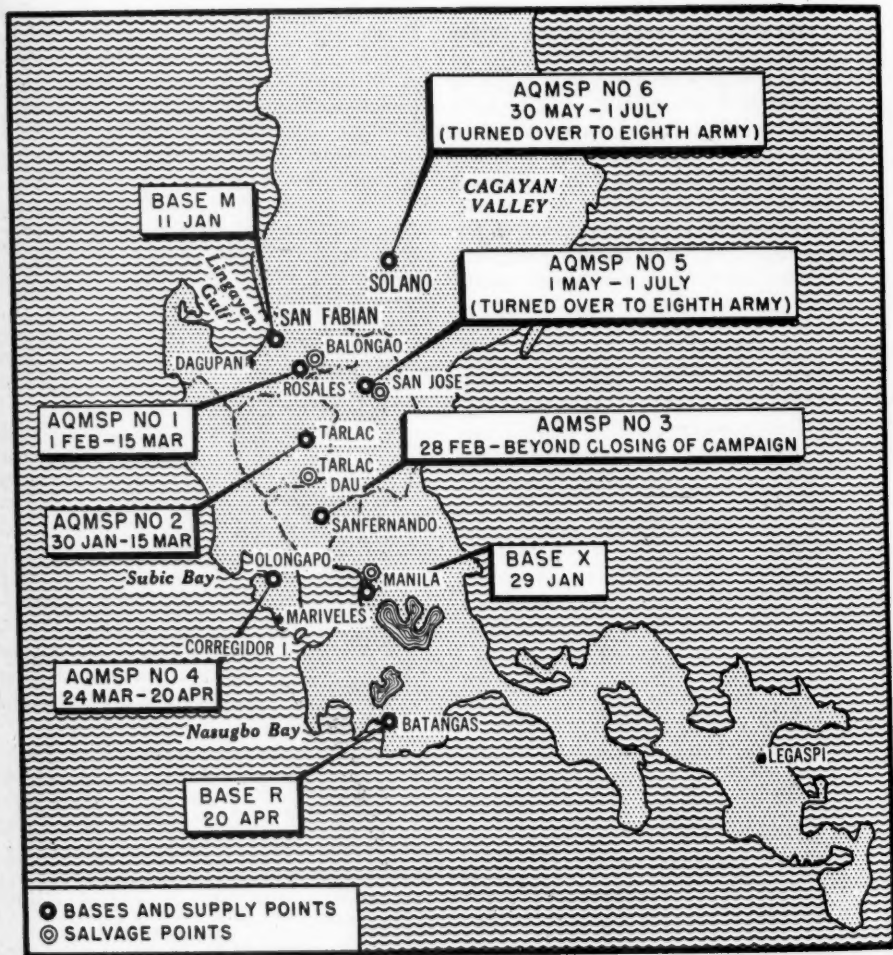
d. Eighth Army was to furnish initial Quartermaster supplies and equipment required by Sixth Army troops staging in areas under Eighth Army control.

## Plan of Operation on the Far Shore.—

The Quartermaster plan for operation on the far shore was divided into three phases:

a. The first phase of the plan covered the period from the landing until ASCOM,

## Map of Luzon



Map showing bases, supply points, and salvage points—  
installations on the Island of Luzon,  
Philippine Islands.

under control of the Commanding General, USASOS, should assume supply responsibility for troops in the objective area for which the target date was S+20. During this phase, supply responsibility was to be decentralized. Major units (corps, divisions, RCT's, ASCOM, AAF and Army troops) were to be responsible for unloading their troops, supplies and equipment scheduled for landing at the several beaches, and for establishing and operating their respective dumps. Service units were to be attached, as necessary, to the major units to enable them to perform these functions. ASCOM was to locate permanent dumps and receive and store Quartermaster supplies discharged from resupply ships so that ASCOM supply points could operate by S+20. It was contemplated that initial unit stocks (with the exception of MT fuel and distillate) would suffice during the first thirty days, but in case of unforeseen shortages, ASCOM was to be prepared to make emergency issues when approved by the Army Quartermaster. Motor transport fuel and distillate were to be available from bulk tanks by S+7.

b. *The second phase* was to extend from the time ASCOM, as directed by the Commanding General, Sixth Army, assumed supply responsibility (target date S+20), until the Army Quartermaster should assume that responsibility for troops forward of the ASCOM base area. ASCOM Supply Points, stocked from resupply ships, were to be augmented by unconsumed supplies taken over from corps, divisions and separate unit dumps. Organizations, using unit transportation, were to draw supplies from these central dumps. With the exception of ten D/S carried with troops, Quartermaster supplies arriving during this phase were to be moved directly to ASCOM dumps.

c. *The third phase* was to begin when the Army Quartermaster should assume supply responsibility for all troops forward of the ASCOM base areas, ASCOM was to displace supplies forward to Army Supply Points to be selected by the Army Quartermaster and operated by Sixth Army personnel. Divisions,

corps, troops, and army troops were to send organic transportation to Army Supply Points where supplies were to be loaded by operating personnel, ASCOM installations were to continue to serve corps, divisions, and army troops located in the Base area.

The Quartermaster, ASCOM, was to establish and operate the following services: (1) bakery, (2) laundry, (3) salvage, (4) sales store, (5) purchasing and contracting, (6) refrigeration, (7) graves registration, (8) drum and can refilling stations (MT gasoline), and (9) vehicle refueling stations at selected points along the main supply roads.

#### The Determination of Requirements of Quartermaster Units and of Quartermaster Supplies and Equipment

*Quartermaster Units.*—The Army Quartermasters' initial request for service troops was cut approximately 40% by GHQ. The reduction might have seriously affected the success of the operation had not a fair amount of civilian labor and some rail transport facilities been available in the objective area. Quartermaster units, attached to Sixth Army for the M-1 Operation by GHQ, were, for the most part, initially reattached by Army to ASCOM or to the Corps, Divisions or RCT's as indicated in the table on page 44.

Prior to the operation, all Quartermaster units were inspected by representatives of the Army Quartermaster to assure that they would be capable of performing their primary missions. Inspections covered the state of training of personnel and the status and condition of equipment.

*Quartermaster Supplies and Equipment.*—Initial supplies were to be furnished from mounting bases in Leyte, New Guinea, New Britain and the Solomons. Sixth Army troops, I Corps, XIV corps, 158 RCT and ASCOM troops arriving in the objective area on assault echelons (S Day to S+10 inclusive) were to carry a minimum of 10 D/S of Class I, II, III and IV Quartermaster supplies. The Commanding Generals of the above major commands were to be responsible for the deli-

	Unit	ARMY	158 RCT	I Corps	XIV Corps	ASCOM	Total (Co)
Hq & Hq Det, QM Bn	ea	1		1	1	4	7
QM Bakery Co	plat					16	4
QM Car Plat	plat	2					2
QM Depot Sup Co	plat			1		6	2½
QM Fum & Bath Co	plat					2	1
QM Gas Sup Co	plat	1	1	1 plat+det	3	2	4+
QM Graves Reg Co	plat	Hq Det	Det	2	1	1	1
QM Ldry Co (SM)	plat					4+sec	4+sec
QM Ldry Plat (Type A)	plat					3	3
QM Ldry Plat (Type B)	plat		1	4	3	1	9
QM Petr Prod Lab	ea					1	1
QM Rhd Co	plat	1	Det	3+Det	3	1	4
QM Refrig Co	plat					3	1
QM Salv Coll Co	plat			3	2		1½
QM Salv Rep Co	plat					4	2
QM Serv Co	plat	2	1	4	4	10	10½
QM Trk Co	plat	3	2	6	8	30	16+plat
QM War Dog Plat	plat	1		1	1		3

very of sufficient additional supplies to bring the total to the following levels:

Class I, II, IV	30 D/S
Class III, MT Fuel & Distillate	15 D/S
All other Cl III items	30 D/S

All units arriving after S+10, including reserve divisions, were to bring 30 D/S of Class I, II & IV and 10 D/S of Class III.

Ten days supply of Class I for 20,000 troops were set up at Leyte for air dropping if the need should arise.

The major portion of Quartermaster resupply requirements was to be provided by 22 balanced loaded ships from the United States, each loaded with 30 D/S of all classes for 20,000 troops, which were to arrive in the objective area between S+4 and S+55. Supplemental vessels, with supplies required over and above the maintenance stocks on balanced resupply ships, were to arrive on S+15.

Two Liberty type ships loaded solidly with Class III supplies were to be held available as floating reserves for combat losses or other emergencies.

### Operations

In general, supply operations proceeded by phases according to the plan of operations outlined above. The unloading of resupply shipping was hindered by poor landing beaches and high surf resulting in a rather "hand-to-mouth" existence during the early stages.

Lack of sufficient truck transportation made it very difficult to supply rapidly advancing combat troops until it was possible to place the railroad in operation. Notwithstanding all obstacles, however, Quartermaster supplies and services were at all times adequately maintained to meet the needs of the troops.

*First Phase.* Initial landings were made on 9 January 1945 (S Day) against light opposition, and the beachhead was rapidly extended. Quartermaster supply responsibilities were decentralized. Divisions began unloading troops and initial supplies over their respective beaches. Great difficulty was experienced on some of the beaches due to the high surf. In many instances it was not possible to discharge rations and other essential supplies from troops ships until several days after the troops had landed. Other troop units failed to bring the prescribed level of initial supplies. Because of these factors, it became necessary for ASCOM to begin issuing rations on S+10 (19 January 1945). Unloading of the first resupply ship began on S+6 (15 January 1945). This enforced procedure, coupled with the difficulty experienced in unloading shipping, unbalanced ration stocks in ASCOM dumps. Subsequent recapture of rations on troop ships did not materially correct this condition. ASCOM



established its main supply point, 11 January 1945, at San Fabian and a sub-base at Dagupan.

*Second Phase* began on S+10 (19 January 1945) when, because of the rapid movement of the XIV Corps southward in the Central Plains area, ASCOM was directed to assume responsibility for all unloading operations in the objective area. Units, however, continued to draw from unit dumps, supplemented whenever necessary by issues from ASCOM. The ASCOM Base Area was established and its boundaries defined. ASCOM was directed to assume full logistic responsibility for the M-1 area on S+20 (29 January 1945) and, as of that date, all unconsumed supplies remaining in unit dumps were turned over to that agency.

*Third Phase.* Combat units having advanced beyond the economical hauling distances of unit trains, it was necessary to establish Army Quartermaster Supply Points (AQMSPP) in the Army Service Area. AQMSPP No. 1 opened at Rosales on S+23 (1 February 1945), AQMSPP No. 2 opened at Tarlac on S+21 (30 January 1945) and AQMSPP No. 3 opened at San Fernando, Pampanga on S+50 (28 February 1945). Other supply points were established as indicated on map. (See Map.)

A minimum of 3 D/S of all classes was to be maintained at each of the supply points.

*Supporting and Adjacent Operations.*—Several major supporting operations took place during this period:

The XI Corps, mounted by the Eighth Army at Leyte, landed north of Subic Bay at San Antonio on S+20 (29 January) and on S+21 (30 January) passed to the operational control of Sixth Army. Initial supplies and resupply shipping set up for this operation by the Eighth Army were sufficient to support this operation until S+74 (24 March) when AQMSPP No. 4 was established in the Subic Bay area and Sixth Army assumed supply responsibility.

The 11th Airborne Division landed in the Nasugbo Bay area on S+22 (31 January) under the operational control of the Eighth

Army. This control passed to Sixth Army on S+33 (11 February) and supply responsibility in turn, passed to this headquarters on S+54 (4 March).

For amphibious landing on Corregidor on S+38 (16 February) the 1st Battalion of the 34th Infantry Regiment, reinforced, was supplied 10 D/S Quartermaster supplies from the Subic Bay (XI Corps) dump. On S+38 (16 February) the 503d Parachute Infantry RCT, mounted by Eighth Army, made a parachute landing on Corregidor. XI Corps continued to supply this force from its stocks at Subic Bay.

Some of the major difficulties encountered during the third phase were as follows:

The advance toward Manila was more rapid than had been expected and resulted in a severe strain on transportation facilities. As a result, supply points were not able to build up their prescribed levels of supply and, in many instances, it was necessary to break down and issue supplies as fast as they were received.

Filipino labor rations failed to arrive as scheduled, causing appreciable reduction of Army ration stocks.

There was considerable delay in the establishment of the bulk gasoline distribution system necessitating the discharge of both reserve Class III ships. Bulk distribution was finally established 10 February 1945.

Class II & IV supplies for Philippine Army and Filipino Guerrillas were ordered prior to the M-1 Operations, but the supplies did not arrive as requested. This necessitated the issuing of Class II & IV supplies from Army stocks causing a drain on Class II & IV supplies, especially small sizes in shoes and clothing.

Replacements arrived without proper equipment, again necessitating issue from Sixth Army Class II & IV stocks.

On 13 February (S+35) the Luzon Base Section, USASOS, was established, The Commanding General, USASOS, within the area of the Luzon Base Section, assumed responsibility for advancing supplies and logistic

support of all Sixth Army troops either directly from USASOS bases or from Army Quartermaster Supply Points.

**Concluding Phase.** The amphibious landing at Legaspi on S+82 (1 April) by the 158th RCT, was supplied from Base "K" located on Leyte Island. These supplies were augmented by perishables shipped by air from Manila.

AQMSP No. 5, located at San Jose, Nueva Boiga Province, was opened on S+112 (1 May) to support troops in that area and operations into the Cagayan Valley through the Balete Pass. This supply point was stocked with 5 D/S Quartermaster supplies for a strength of 60,000.



GI's massing bread and placing it in baking pans at 262d QM Bakery, AQMSP No. 3, San Fernando, Pampanga.

Upon capture of Balete Pass and the start of the drive up the Cagayan Valley, Army Quartermaster Supply Point No. 6 was opened on S+141 (30 May) at Solano, Nueva Viscaya Province. It was stocked with 10 D/S Quartermaster Class I and III and expendable supplies for 35,000 troops. This supply point was established to give logistical support to the Cagayan Valley drive and to insure a constant supply in the event the hazardous road through Balete Pass became temporarily impassable. The progress of the combat units in this area was so rapid that it was extremely difficult to maintain supply lines. Delivery of Class I and III supplies

for the 37th Infantry Division by air transport was, therefore, initiated on S+157 (15 June); and continued for the remainder of the operation.

AQMSP No. 1 and No. 2, at Rosales and Tarlac respectively, were closed 15 March. AQMSP No. 4 at Olongapo was closed 20 April. On 1 July 1945, operation of AQMSP No. 5 and No. 6 was transferred to control of Eighth Army, in accordance with provisions contained in Field Order 70, Headquarters Sixth Army, 17 June 1945. AQMSP No. 3 at San Fernando, Pampanga, continued to operate under the direction of the Quartermaster, Sixth Army, in order to facilitate re-equipping of units staging in adjacent areas for further operations.

During the operation the Supply Points had furnished to Sixth Army troops, 96,682.2 tons (DWT) of Quartermaster supplies.

#### Specialized Quartermaster Activities

**Bakeries.**—The number of bakeries assigned was sufficient to provide the full allowance of bread. The plan was to set up bakeries at each of the QM Supply Points as they were established. The first of these went into operation at Rosales. A full issue of bread was available in that sector on 3 February 1945. As the forces moved to the south, AQMSP No. 2 at Tarlac commenced operation, and bread was first issued there on 5 February 1945. A bakery unit was sent to San Fernando, Pampanga on 16 February in advance of the QM Supply Point to be established there. Ingredients were delivered by truck from Tarlac. Operation of this bakery enabled troops in Manila and civilians at the Santo Tomas Internment Camp to obtain fresh bread concurrently with the liberation of that city.

Further south bakeries were established at Paranaque and Calamba. No particular difficulties were encountered at either of

these locations and full allowances of bread were always available.

When the XI Corps landed in the Subic Bay area a bakery unit was assigned to the organization and set up at Olongapo. It continued operation under Corps direction until the AQMSP was taken over by Army. Troops on Corregidor and Mariveles received daily issues of bread from this source via LCM.

During the closing phase of the operation, bakeries were operated at AQMSP No. 5 at San Jose and at AQMSP No. 6 at Solano.

Throughout the entire operation combat troops were given first priority in the issue of bread. They received an average of 8 ounces of bread per ration while non-combat troops received an average of 7.5 ounces per ration. Every possible effort was made to get fresh bread into the hands of troops on the front lines. With few exceptions, this was successfully accomplished.

During the campaign the bakeries issued 20,342,056 pounds of bread to Sixth Army troops.

*Salvage Operations.*—Early in the campaign it became apparent that much larger quantities of enemy equipment and supplies were being captured by our troops than in previous operations against the Japanese. A Salvage division was therefore organized in the office of the Sixth Army Quartermaster to plan, coordinate and supervise the collection, segregation, classification, storage, and disposition of all salvage.

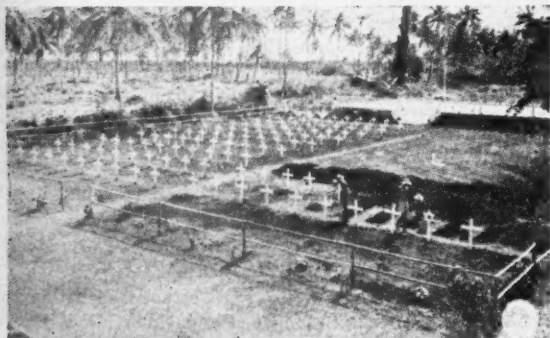
Initially, only the 678th QM Salvage Collecting Company was attached to Sixth Army; however, as the campaign progressed, the first and third platoons of the 236th QM Salvage Collecting Company were attached from LUBSEC. One salvage collecting platoon was attached to each of the three corps and the remaining two platoons were used to operate Army salvage dumps. This as-

signment of platoons continued until the control and operation of the dumps were transferred on 18 March to LUBSEC. Upon this transfer, two platoons were returned to LUBSEC control. Throughout the campaign the method of using salvage collecting platoons working with corps was adjusted to the requirements of the tactical situation, platoons and sections of platoons being transferred as the need arose, to units operating in areas where salvage material was most plentiful.

Salvage dumps were established by Sixth Army at Balungao, Pangasinan; Dau, Panganga; San Jose, Nueva Ecija; and Quezon City in Manila (see Map). All salvage, except that requisitioned by Technical Intelligence or Civil Affairs personnel, or retained by capturing units for immediate combat use, was collected and evacuated to these dumps, where segregation, classification and storage were accomplished. Disposition of salvage from the dumps was accomplished by (1) issue of needed items to supply services and combat units, and (2) transfer to LUBSEC (later PHIBSEC). Recovered civilian vehicles were turned over to the



Captured Japanese ammunition collected in a Corps Collecting Point near Rosario, Pangasinan.



Cemetery at Legaspi Port No. 1 (XIV Corps).

Provost Marshal General for disposition. Constant liaison was maintained with lower units in order to insure prompt recovery, evacuation, and issue of all captured and abandoned material.

**Graves Registration.**—As combat troops advanced, corps and divisions established cemeteries where combat dead were evacuated for burial. Initially, one corps advanced so rapidly it was necessary for several small cemeteries to be established in the corps zone of action. On S+17 (26 January 1945) ASCOM established a cemetery to which the deceased of one corps were evacuated for burial. Graves registration units serving Divisions of this particular corps established Division Graves Registration Collecting Points on the main supply routes where bodies of those killed on the field of battle were received. Here the bodies were properly processed, prepared for burial, and evacuated to the ASCOM cemetery where interment was accomplished by ASCOM graves registration personnel. In those localities where no centralized ASCOM cemetery existed, corps and divisions established temporary cemeteries to receive the dead in accordance with the above-mentioned plan of evacuation. Here burial was accomplished by attached corps and division graves registration personnel. Temporary cemeteries initially established by the two corps under this command were consolidated into a centralized LUBSEC cemetery. During

the latter stages of the operation, the dead who were previously buried in isolated graves and battlefield cemeteries were exhumed and the remains reinterred in one of the two PHIBSEC semi-permanent cemeteries.

Sixth Army Graves Registration personnel processed for burial approximately 10,370 fatalities during the operation. In addition, prior to the assumption of responsibility for USAF cemeteries by AFWESPAC, Sixth Army graves registration personnel accomplished 5,877 burials.

#### Employment of Other Quartermaster Units

**Truck Units.**—Throughout the operation, Quartermaster truck units were under the operational control of the Transportation Section, Sixth Army. The Quartermaster Section's responsibility in connection with such units was accordingly limited to administration control of the Transportation Section, Sixth Army. The Quartermaster Section's responsibility in connection with such units was accordingly limited to administration.

**Service Units.**—Except for the use of one QM Service Company at each Army Supply Point, all service units were attached to Corps for operation. The Army Quartermaster did not maintain a labor pool.

**Car Platoons.**—The two Quartermaster Car Platoons attached to Sixth Army were sub-attached to Army Headquarters to provide transportation necessary for the accomplishment of staff functions.

**Depot Supply and Railhead Units.**—All Quartermaster Depot Supply and Railhead units were used at Corps and Army Supply Points. Normally, a Quartermaster Railhead Company receives, stores and issues Quartermaster supplies for 30,000 troops. During the Luzon operation, for extended periods during troop movements, a platoon of the 558th Quartermaster Railhead Company at AQMSP No. 1 and a platoon of the 559th Quartermaster Railhead Company at AQMSP

No. 2 received, stored and issued Quartermaster supplies, in each case, for 75,000 to 100,000 troops. Each platoon was supported by a Quartermaster Service Company and a section of a Quartermaster Gas Supply Company.

Quartermaster gas supply platoons handled the issue of bulk and packaged petroleum at Corps and Army Supply Points. Bulk tanks were set up at Tarlac, San Jose, and Dau to handle V-80 and Diesel which were delivered through pipe lines and by tankers from Base M. At other points where bulk plants were not established, POL was received by rail and trucks in 55-gallon drums. The following methods of issue were used:

- a. Exchange of drums or cans at supply points.

- b. Dispatching a tank trailer to a division area and discharging into unit containers.

- c. Dispatching unit vehicles with containers to a drum or can refilling point. Five-gallon cans were seldom used. Units preferred the 55-gallon drum probably because they had become accustomed to the use of the drums in previous operations when sufficient five-gallon cans had not been available.

**Laundry Units.**—The only laundry units available to Sixth Army during the campaign were nine type "B," Quartermaster Laundry Platoons. Each of these was attached to a field hospital. Laundry for other units and their personnel was handled by civilians through unit and individual arrangement. The nine Sixth Army laundry platoons processed 1,731,544 pounds of material during the operation.

**War Dog Platoons.**—The three platoons of war dogs assigned to Sixth Army Quartermaster were redesignated as Infantry units and assigned by G-3 to Infantry Divisions.

#### Organization of the Army Quartermaster Office

During the M-1 Operation, the organization and functions of the Army Quartermaster Office were generally as follows:

**Administrative Division.**—Preparing and maintaining statistical and logistical data; supervising the establishment of cemeteries

and the recording of burials; maintaining records of Quartermaster units and supervising allocation of Quartermaster replacements and transfer of personnel; recommending unit and individual awards for Quartermaster units and personnel; receiving and dispatching all mail, radiograms and publications; and maintenance of office files.

**Supply Division.**—Planning and supervising all matters pertaining to Quartermaster supplies and equipment; operation and administration of Quartermaster depots and supply points; initiation of daily telegrams; initiation and processing of requisitions of critical items for the resupply of units and Army Supply Points; coordinating corps and separate major unit supply points; insuring delivery of supplies by initiation of follow-up action on requisitioned items; arranging air shipments of critical items from supply bases to army supply points, and from army supply points to forward combat units; and maintaining close liaison with USASOS supply bases.

**Field Service Division.**—Training of Quartermaster units; planning the number, type and attachment of Quartermaster units; maintaining contact in the field between the Army Quartermaster, Quartermaster units and installations, and USASOS bases; initial installation, initial organization, and development of Army Quartermaster supply points; inspection of units prior to and during the operation to determine their fitness for operation in combat areas.

**Salvage Division.**—Planning and supervising the collection, evacuation, segregation, temporary storage and utilization of salvage.

#### Lessons Learned

##### Conclusions:

- a. Prescribed D/S of rations and supplies were not brought into operational areas by many non-divisional units.

- b. Most Quartermaster units were put ashore promptly, but in some cases supplies and equipment were not discharged for several days.

- c. The loading of heavy deck cargo on the hatches and in the holds of Quartermaster re-supply ships caused considerable



delay in discharge of urgently required Quartermaster supplies.

d. Quartermaster re-supply ships contained an insufficient quantity of small sizes of clothing and shoes.

e. Pilferage and other damage to supplies resulted from the failure of units to take proper security measures in safeguarding initial maintenance stocks. In a few instances, complete loss of initial maintenance stocks was experienced.

f. In Class III supplies, there were no tank trucks initially available to handle bulk V-80 gasoline. Two and one half-ton cargo trucks were converted into tank trucks by using Navy cubes and captured Japanese tanks.

g. Initially, there was an insufficient supply of drums for refilling Class III supplies.

h. Initially, combat troops were not thoroughly familiar with their responsibilities in regard to graves registration procedure. In some cases deceased were evacuated from the front lines without pertinent information accompanying the bodies. In other cases, "Emergency Medical Tags" were improperly prepared, thereby making it necessary for graves registration personnel to seek information sometimes difficult to obtain when the body had been removed from the location where it had been recovered. Combat troops initially were lax in the matter of making a thorough battlefield search for unrecovered bodies after combat had ceased in the sector.

i. Delay in the evacuation of salvage to guarded dumps resulted in destruction by the enemy and in pilfering. This delay was caused by (1) lack of sufficient transportation to make rapid reconnaissance of captured and abandoned material, and (2) lack of facilities for moving very large items.

#### Recommendations

It is recommended that:

a. At the time of staging and loading of units, closer supervision be exercised in order to assure that the prescribed supplies and equipment accompany units to the operational area. This applies primarily to small attached units.

b. All commanders be reminded that the value of service units is greatly reduced if their equipment is not available for use when the personnel arrive in the objective area. This is especially true of truck and bakery companies.

c. All heavy deck cargo which will delay the discharge of Quartermaster supplies be removed from re-supply ships prior to their arrival in the objective area.

d. Quartermaster re-supply ships contain sufficient small sizes of clothing and shoes.

e. Strict measures be taken by unit commanders to safeguard stocks of supplies accompanying their units on landing operations.

f. Gasoline Supply Companies be provided with sufficient tank trucks.

g. Larger stocks of drum gasoline be furnished in the early stages of future operations.

h. Early re-supply be accomplished by balanced loaded amphibious shipping of from 50,000 to 80,000 man days of supply. During the operation the number of available amphibious ships was barely sufficient to most troop movement requirements.

i. Sufficient Quartermaster units be provided so that trained personnel will be available to furnish adequate service for combat troops.

j. Prior to entering combat, designated personnel throughout the divisions be thoroughly schooled in the responsibilities of combat troops in regard to graves registration service.

k. Three  $\frac{1}{4}$ -ton trucks be added to the T/E allowance of vehicles for Salvage Collecting Companies (present T/E allowance: one  $\frac{1}{4}$ -ton truck). This will permit rapid reconnaissance for captured and abandoned material by salvage collecting units which often operate as separate platoons or detachments, over wide areas.

l. Three 10-ton wreckers and three low-bed engineer type trailers be added to the T/E allowance for Salvage Collecting Companies. (At present neither of these items is included in the T/E.) This will facilitate prompt removal of cumbersome and heavy captured or abandoned material.

# The Essential Elements of Information and the Intelligence Plan

COLONEL H. D. KEHM, *Field Artillery*  
Instructor, Command and General Staff School

MANY commanders and staff officers who participated in long and arduous campaigns and never saw essential elements of information (EEI) or an intelligence plan as outlined in our field manuals are quite skeptical when yards of EEI and reams of intelligence plan are found regularly in schools and unit training.

Since this feeling is more or less widespread we should re-examine our doctrines and *their application* to see if something has deteriorated.

First, we should inquire why we have EEI and an intelligence plan. The only reason for their existence is to produce intelligence instructions or missions which should supply the information needed without any unnecessary duplication of effort. The EEI state the intelligence needs in broad general terms. The intelligence plan is the process by which these needs are analyzed and converted into specific information-gathering jobs or missions.

If this is true why don't we see EEI more frequently? The answer is based on the fundamental nature of intelligence activity. It is a constantly developing moving picture in which blanks must be filled while the scene is changing. By frequent, at least daily, contact with G-2 and with subordinate and higher commanders and through his own observations the commander maintains a running picture of the capabilities of his enemy. Furthermore, a good commander and G-2 are always fighting the battle or phase ahead of the one in progress or about to get under way. For these two reasons, novelties or variations in intelligence requirements are constantly arising. As they come up, G-2 promptly transforms them into missions, often without asking the commander to authorize any formal announcement of EEI.

If new intelligence missions are continuously being given it is clear that they must replace, supplement, or modify those previous-

ly assigned. The intelligence plan unlike most other plans, is not a set piece that is started and played out like a tactical operation such as an assault on a hostile shore or an air attack on an enemy airdrome. The intelligence plan results in instructions to various agencies to do specific things. These are usually physically independent of each other. Some are completed quickly, others take considerable time. Hence, as the operation progresses certain of these missions are no longer possible, certain others can no longer yield valuable information, and still others are fully accomplished. At the same time new missions arise because new enemy capabilities (or modifications of former ones) have arisen.

The intelligence picture develops continuously to meet the needs of new phases of the operation. There is seldom the need for preparing a complete new plan at any particular time. Intelligence presents a moving picture—not a series of “stills.”

If this is true, why don't we scrap the plan conception? There are two good reasons for keeping it. *First*, it outlines a logical process through which one must go if he wishes to insure the greatest chance that all possible indications of prospective enemy action will be sought. *Second*, it is the best insurance against issuing conflicting and duplicating instructions which will “harass the troops.” This process of analyzing intelligence requirements to produce logical missions should be followed whether a single EEI or a dozen are under consideration. The process does not have to take place on paper. That always helps. However, a *skillful* and *experienced* G-2 can do the process mentally and put only the results on paper.

Our training is often misleading too because it cannot present what constitutes SOP. We usually ask the Nth Infantry to report any change in the enemy strength on its

front. Yet we know that if the Nth Infantry had enough training to get to the battlefield they will report such a fact as a matter of routine. Units ordinarily report certain classes of information, e.g., any strengthening of the enemy facing them, without specific orders. Just what these are is difficult to portray in most exercises and problems. This does work itself out in operations, *but even then in no two cases does it work out exactly the same way.* Our training, quite properly is on the conservative side.

We note that our doctrine in respect to EEI and the intelligence plan is sound. It needs more thoughtful application.

Our training and instruction can assist this "more thoughtful application" by placing more emphasis on the following:

*First*, by frequent—usually informal—conferences the commander and G-2 are continuously determining new EEI or modifying existing ones.

*Second*, an alert intelligence section by formal or informal action quickly transforms EEI into new intelligence missions or modifications of existing ones. These new or modified instructions are disseminated formally or informally as soon as they are prepared. The original intelligence plan is therefore usually patched and altered so that it gradually grows into a new one instead of being replaced in its entirety.

*Third*, the formal announcement of EEI and the resulting working out of a detailed intelligence plan is the safest procedure when a complete change in nature or scene of action takes place. This occurs when, for example, a unit moves from one front to another or, when it passes from the static defense to the offensive or when it is earmarked for a special operation such as a landing on a distant hostile shore. In the "normal" progressive operation the gradual evolution described above is more appropriate.

How can we train in these points?

*First*. We can train in informal briefings and conferences, a subject in which our training has been weak generally—not only

so far as concerns intelligence. We can do this by presenting situations such as: You are G-2, you know what has happened since the last formal report. The Commanding General has just returned from a visit to one of the subordinate commands. You have a chance to speak with him for a few minutes. Required: the topics you will discuss.

Tell him what you've learned. Suggest any new EEI or intelligence missions and get his views on them.

Situations of this general nature readily suggest themselves. Conversations can and should frequently be staged in training.

*Second*. Each unit should set up a limited number of specific items of intelligence and information which are *always* reported when discovered. Similarly, lists of standard information always sought by intelligence agencies such as PI (Photo Interpretation), IPW (Interrogation of Prisoners of War), and documents personnel should be prepared. These might very well be included in the SOP of the unit. They should be kept to such a minimum that they can be memorized easily and used without reference to any paper. Such a list will result in reducing the work in preparing an intelligence plan and will decrease the number of instructions which need to be issued. What is more important, it will serve as a device for focusing effort and attention on basic intelligence essentials.

*Third*. We should put less time in working out complete intelligence plans and more on practice in modifying and developing an existing one by the introduction of new or modified EEI in accordance with a developing situation. Such training will put an intelligence section on the alert and will emphasize the need for anticipatory planning. It will also drive home the conception that intelligence missions are something that must be constantly reviewed to keep them in harmony with events and needs.

*Fourth*. As training progresses there should be frequent practice in which the step is directly from new enemy capability to intelligence instructions.

# Training Staff Trainers

LIEUTENANT COLONEL BENJAMIN F. BOYER, *Infantry*  
Former Chief, Training Division, Command and General Staff School

THE wartime mission of the Command and General Staff School has been to provide the basic staff training needed to meet the requirements of divisions, corps and similar units of the Air, Ground, and Service Forces. Wartime classes operated at the school over a three year period. In that time 17,000 students successfully completed the course.

All of these students were indoctrinated with the techniques necessary for them to function at the general staff level. Training these students, however, was not the only training problem which had to be solved at the Command and General Staff School. It was necessary that suitable instructors be trained, too.

It goes without saying that, if staff officers were to be taught properly, it was necessary to provide a suitable instructional staff. The staff trainers had to be trained! The responsibility for training the school's instructors was assigned to the Training Division, Command and General Staff School.

This article describes the creation and duties of the Training Division as well as the orientation and indoctrination which the new instructor receives before he appears before classes at the Command and General Staff School.

## The Training Division, Command and General Staff School

Prior to 1943, a Training Division, as such, did not exist at the Command and General Staff School. Such instruction in training methods as a new instructor might receive was at the hands of an older, more experienced instructor who was told to help the new instructor "get settled." In those days, the average tour of duty as an instructor was from two to two and one half years. There was ample time for a new instructor to orient himself and to learn to find his way around the School before he appeared on the platform before a class.

By December 1942, the size of the wartime classes was increased. Over a thousand officers were attending each ten weeks course. The number of those detailed by the War Department to the Staff and Faculty of the School also increased. The peacetime faculty had numbered about fifty. It rose to more than one hundred. Parenthetically, it may be remarked that on VJ-Day the Staff and Faculty totaled 165.

At the same time that the Faculty was enlarged, the average tour of duty as an instructor was decreased. By January 1945, it was only a year in length. This progressive reduction in length of tour accentuated the rapid rate of turnover in faculty. There was a distinct possibility that it might impair the maintenance of the traditional high standards of instruction at Leavenworth. Since only five classes of ten weeks length each were given every year, there was a likelihood that instructors would hardly become acclimated before their tour of duty was completed.

The Commandant, being of the opinion that the rapid turnover of instructors required that they be speedily prepared for effective work, created the Training Division.

## Duties of Training Division

Under current regulations (AR 350-110), the Assistant Commandant is charged with all matters pertaining to instruction at the School. It is logical, therefore, that the Training Division function under him. As of August 1945 the Training Division was assigned six different responsibilities. They may be briefly stated:

The Training Division (1) provides a consulting service to all instructors on the application of teaching techniques, (2) supervises the development and use of instructional aids, (3) orients new instructors, (4) supervises the conduct of the Latin American Class, (5) supervises the operation of the consulting service on Climate, Oceanography and Meteorology (C-O-M), and (6) periodically

conducts, for Directors of Latin American Military Schools, the Special Course in Instructional Methods.

These duties are diverse and multifarious. Yet they are all connected, related and dependent. The orientation of instructors is followed up by maintaining the consulting services indicated. And the Special Instructional Methods course rationalizes and presents our techniques and methods for visiting school directors from Latin America.

### Orientation of New Instructors

Orientation of new instructors is the most important of the duties assigned to the Training Division. The large size of the classes and the short tour of duty requires that each instructor be speedily prepared to carry his share of the teaching load.

During 1944 and 1945 approximately one-fifth of the school's instructors completed their tours of duty at the end of each ten week's class. Thus there was virtually a complete turnover of the teaching instructors every calendar year. To replace departing instructors the Training Division was required to train approximately twenty new instructors every ten weeks.

The training of new instructors was accomplished through a formal course in instructional methods and through informal conferences and personal guidance.

Orientation for the embryonic instructor is divided into three parts. The first familiarizes him with the physical plant at the school, including the available facilities and their location. The second deals with educational techniques, while the third and final phase requires the preparation and rehearsal of a formal classroom presentation.

Familiarization with the School and its facilities is done in several ways. First, the organization of the Faculty, the Staff, and the School Services is explained. There follows a tour of the plant. This insures a realization of the facilities which are available to assist in the preparation and presentation of instructional materials. By explanation and demonstration at this stage there is secured a thorough understanding of the

aids available which will assist the instructor in his task.

As mentioned, familiarization with educational techniques comprises the second portion of instructor orientation. A series of conferences are aimed at presenting the following: (1) sources for materials and the development of materials for platform use; (2) methods for evolving or creating situations, exercises and problems; (3) requirements and devices for examining or testing and grading the student; (4) the role of the instructor in map maneuvers, tutorials and committee work; and (5) the use of instructional aids.

When this material is understood, the new instructor moves on to a consideration of the third and final phase of his orientation. He now is ready to prepare a specific subject for rehearsal and presentation to the class.

This preparation of a subject tests the instructor's ability and permits formulation of judgment on the desirability of retaining him on the faculty.

The normal sequence in preparing a subject is as follows: *First*, the instructor is assigned a directive. This directive states the subject to be presented, indicates the class which receives it and the time allotted. It often describes in detail the scope of instruction desired and the emphasis to be given to particular portions of the topic.

Once the directive is obtained, the instructor must analyze it to formulate his own outline. Here in logical sequence, he states and develops the points he wishes to make in his presentation. When the outline has been approved, the instructor develops the outline. He does this by writing a complete manuscript of his presentation. At the same time, the Instructional Aids Section of the Training Division is consulted. It provides expert advice on whether a particular point can be best presented with the aid of a slide, a map, a chart, a film or an exhibit or display. The integration of audiovisual aids with the writing of the manuscript insures maximum effectiveness in presentations.



Much of the instruction at the Command and General Staff School is presented to audiences ranging in size from two hundred to one thousand students. The size of classes makes the employment of public address systems imperative. The easy informality which often contributes to the success of small-group instruction cannot prevail with a large class. Therefore, special attention is given to the instructor's preparation. He must become adept to the use of the microphone, he must utilize all available training aids to avoid the formality which is likely to appear in large-group instruction. He prepares notes for use on the platform and rehearses the entire presentation several times before he is permitted to appear before a class. During rehearsals criticism is made as necessary of any mannerisms which might detract from teaching. The aims of the Training Division are to make the instructor feel at home on the platform and his teachings clear, accurate, readily understandable and effective.

When the new instructor has completed the work outlined above, a dress rehearsal is held in the hall where the presentation is to be made to the class at a later date. A satisfactory final rehearsal, usually held in the presence of the new instructor's future Division Chief, is followed by a recommendation to the Assistant Commandant that the instructor be assigned to a Division of the Faculty. If the recommendation is approved, the instructor is released from the Training Division and begins his work with the classes.

#### Outline of Instructional Methods Course

The formal instruction given as orientation for the new instructor may, for convenience, be divided into six separate sub-courses. The material presented in each of these sub-courses is indicated in the following outline:

##### *Course in Instructional Methods (1945)*

(Training, Division, Command and General Staff School)

##### *I. Command and General Staff School Orientation.*

- a. Organization, Command and General Staff School.

- b. School Services.

- c. Tour of Plant.

##### *II. Methods of Instruction (General).*

- a. Theory and Methods of Military Instruction (FM 21-5).

- b. Basic Educational Methods.

- c. Specific Methods for Command and General Staff School.

- d. Use of Instructional Aids.

##### *III. Measurement and Evaluation of Educational Achievement.*

- a. General Theory.

- b. Preparing Requirements for Command and General Staff School.

- c. Marking system, Command and General Staff School.

##### *IV. Research and Preparation of Instructional Materials.*

- a. Techniques of Research.

- b. Fundamentals of Writing and Outlining.

- c. Instructor Relationships with Publications Divisions.

##### *V. Techniques of Presentation.*

- a. Elementary Public Speaking.

- b. Supervised Rehearsals.

- c. Microphone and Classroom Techniques.

- d. Supervised study of presentations by experienced instructors.

- e. Presentation of Instructor's prepared materials.

##### *VI. Applicatory Work.*

- a. Preparing a Conference.

- b. Working as assistant on Map Maneuvers or Tutorials.

- c. Serving as assistant on marking committees and solving committees.

#### Summary

The new instructor usually spends from two and one half to three weeks in the Training Division. In that time he receives a comprehensive knowledge of the facilities and services available to assist him in teaching the future General Staff Officers of our Army. He refreshes his memory on educational techniques and receives indoctrination in special educational techniques employed at

the Command and General Staff School. In addition, he actually prepares one exercise or conference for presentation to the classes.

In all of the training of the new instructor, the emphasis is placed on "learning by doing." In orienting him the applicatory system is employed constantly. Thus, the same educa-

tional philosophy which is used with the classes at the school is also used in training its instructors. The time devoted to orienting the new instructor is intended to make him aware of his duties as a teacher and how he can discharge those duties. Through it the staff trainers receive their training.

## Biological Warfare

A type of warfare that might have been employed in World War II—a potential avenue of attack by our enemies—was biological warfare. Biological warfare may be defined as the use of bacteria, fungi, viruses, rickettsias, and toxic agents from living organisms (as distinguished from synthetic chemicals used as gases or poisons) to produce death or disease in men, animals, or plants. This type of warfare was not unknown in World War I, although it was employed only on a very limited scale. There is incontrovertible evidence, for example, that in 1915 German agents inoculated horses and cattle leaving United States ports for shipment to the Allies with disease-producing bacteria.

The War Research Service was organized in the summer of 1942. It served primarily as a coordinating agency and drew on the facilities, personnel, and experience already existing in the Government and private institutions.

While it is not possible to reveal at this time the specific agents on which intensive work was done, the general nature of the problem and the type of information that was obtained in this field can now be told. It should be emphasized that while the main objective in all these endeavors was to develop methods for defending ourselves against possible enemy use of biological warfare agents, it was necessary to investigate offensive possibilities in order to learn what measures could be used for defense.

A wide variety of agents pathogenic for men, animals, and plants was considered. Agents selected for exhaustive investigation were made as virulent as possible, produced in specially selected culture media and under optimum conditions for growth, and tested for disease-producing power on animals or plants. Intensive investigations were conducted on many aspects of this field, including studies of how well various organisms of high disease-producing power would retain their virulence and how long they would remain alive under different storage conditions; biological, physical, and chemical protective measures; the number of organisms required to produce infection; the effectiveness of antibiotics and chemo-therapeutic agents; the incubation period of various diseases; and the effectiveness of certain chemicals (or coagents) when used with pathogenic agents or toxins in influencing their disease-producing powers.

Studies were made of methods and means by which biological warfare agents might be employed against us. The activities of the United States in the field of biological warfare, undertaken under the goad of necessity and aimed primarily toward securing for this nation and its troops in the field adequate protection against the possible use by our enemies of biological warfare agents, were carried on with that teamwork which has characterized so many of our efforts in wartime.

—From a news report.

# The Reduction of Intramuros

MAJOR REGINALD S. JACKSON

Press Relations Officer, XIV Corps

## Prologue

**T**ROOPS of the XIV Corps invaded Lingayen Gulf in central Luzon on S-day, which was 9 January 1945. The landing was made without ground opposition, although enemy aircraft continually attacked shipping in the harbor and harassed landing craft traveling to the beaches from transports.

Meeting sporadic resistance, the corps drove rapidly south and by 15 February had broken all Japanese organized resistance in central Luzon and Manila with the exception of strong defenses which still existed in the sixteenth-century walled city (Intramuros).

Four days later the main effort of the 37th Infantry Division, progressing from the east with its northern limiting point the Pasig River, had reached Taft Avenue.

In the 37th's southern sector, the 148th Infantry Regiment was meeting stiff opposition from Japanese defenses in the City Hall, the Legislative, Finance and Agricultural buildings. These strong points were contained by the 148th and mopping up began as Major General Robert S. Beightler, commanding general of the 37th Division, completed his plans for the reduction of Intramuros.

Meanwhile, the 1st Brigade of the 1st (Dismounted) Cavalry Division, under control of the Commanding General, 37th Division, was threatening from the south to imperil any Japanese withdrawal in that direction. The enemy made no attempt to fortify and defend the Port Area which isolated Intramuros from Manila Harbor.

## The Defenses

The walls of Intramuros are of stone block, forty feet thick at the base, tapering through sixteen feet of height to a width of twenty feet at the top. Space for seven gates is included in the walls, six defended by sally ports and the seventh by the Philippine Government Mint Building.

Rear Admiral Iwabuchi, commander of the Manila Naval Defense Force, had placed his

main strength and armament along the east wall sitting in twenty-nine mutually supporting machine guns and twelve guns including two antiaircraft, one 75-mm and two 105-mm pieces. Tank and vehicle obstacles were placed at the junction of Taft Avenue and Burgos Street just southeast of Victoria Gate; at Quezon and Victoria Gates. Mine fields were laid before the sally ports protecting Parian and Victoria Gates.

Along the north wall defenses were secondary only to those to the west. Fifteen machine guns, seven guns and one 150-mm howitzer comprised the armament. Included among the guns were: one 8-inch, one 37-mm, one 120-mm and one 6-inch. The preponderance of artillery along this wall indicates that these weapons were used to fire upon United States troops advancing into the city from the north as well as for final defense. One of the machine guns was emplaced at the southern approach to Jones Bridge to fire across the span. An obstacle was placed at the gate behind the Mint and mine fields were laid between the Mint and the wall.

Next in priority in the planning of the defenses was the west wall. Here seven machine guns, four guns and a 105-mm howitzer were utilized. One of the guns was of 105-mm. Two obstacles protected the entrance to the city on Aquana Street. There were no mine fields laid. The artillery weapon along the west wall indicated Japanese preparations for a United States amphibious landing south of the Pasig River in the Port Area.

Resistance of the enemy in the city buildings southeast of Intramuros enabled Admiral Iwabuchi to concentrate his weapons elsewhere, and along the south wall were fifteen machine guns and one gun. An obstacle and mine fields were placed outside the South Gate. In certain places in the walls tunnels were constructed to provide for shifting of weapons.

Virtually all trenches were constructed,



paradoxically, in the southwest section of the city, and barbed wire, used sparingly, was placed along machine-gun final defense lines.

### The Attack

Lieutenant General O. W. Griswold, commanding general of the XIV Corps, in a message to Admiral Iwabuchi on 16 February asked that the Japanese commander surrender his forces, since his situation was hopeless. "If you do not agree to surrender," General Griswold said, "I exhort you that true to the spirit of the Bushido and the code of Samurai, you permit all civilians to evacuate the Intramuros by the Victoria Gate without delay, in order that no innocent blood be shed."

The message was received by the Japanese commander, who made no reply, and on 19 February artillery shelling of Intramuros began. It had been decided initially to level the city by aerial bombardment, but the plan was changed in the assumption that artillery could concentrate on purely military targets, thus rendering the maximum effort for the safety of interned civilians.

Breaching of the wall began with targets just north of Parian Gate and between Parian and Victoria Gates. The first forty rounds of eight-inch howitzer shells at the latter target resulted in a hole in the wall large enough through which to drive a two and one-half ton army truck.

Tanks, tank destroyers and 37-mm guns fired at the walls from ranges of 300 to 500 yards. Later in the day 155-mm howitzers were brought up and fired at the walls from a distance of 600 yards.

Artillery fire continued to enlarge the two apertures for the next four days, and 24 February was set as the date for the infantry assault on Intramuros.

At 0730 the artillery preparation was begun with all corps artillery firing supplemented by 8-inch and 240-mm howitzers. One hundred eighty-two tons of shells were dropped into an area 800 by 900 yards in the hour's concentration.

Simultaneously, the 145th Infantry Regi-

ment began its attack from Taft Avenue directed at the hole in the northeast corner of the city's walls, and elements of the 129th Infantry Regiment crossed the Pasig River in engineer assault boats between the Mint and Jones Bridge.

First assault troops of the 145th arrived at the wall at 0833 to be joined by troops of the 129th at 0836. To screen the attack from Japanese remnants still holding out in the four government buildings southeast of



Machine-gun crew enters the Intramuros.

Intramuros, 4.2 chemical mortar smoke was placed just south and southeast of Intramuros.

North of the Victoria Gate a brisk fire fight ensued, but flamethrower teams reduced this resistance. The crossing of the assault boats was not contested.

The Japanese withdrew, as their positions were in danger of being overrun; and set up their machine guns to bring United States troops under murderous cross fires at street intersections.

In Fort Santiago, where many hundreds of civilians were murdered, the 129th Infantry met stern opposition. Bitter fighting ensued in the ancient bastion in and around devastated buildings, tortuous tunnels, and dark pits which the Japanese had turned into desperation defenses. By night main resistance in the fort had been reduced and 400 bodies were counted in the aged Spanish fortification.

In the 145th Infantry sector more than



2,000 refugees fled from the Del Monico Church, seriously impeding the continuation of the attack in that zone. At this time heavy enemy machine-gun fire was being directed at our troops. After rapid evacuation of civilians, elements of the 145th supported by tanks, self-propelled howitzers and tank destroyers drove the Japanese out of Intramuros.



145th Infantry enters the Intramuros.

The next night, 25 February, Japanese attempted to infiltrate the south wall unsuccessfully.

### Discussion

The plan of defense of the Japanese commander was logical, but the tremendous superiority of American weapons in caliber and number nullified enemy preparations no matter how carefully conceived and executed. Admiral Iwabuchi correctly estimated that the main attack would come from the east with a possibility that it might be shifted to enter the city from the north. However, the Pasig River provided an obstacle whereas there was no such obstacle to the east. It is doubtful that the Japanese commander might have been able to coordinate more ably the artillery pieces at his disposal, since the close range made artillery support in the defense improbable.

The perfect coordination of the lifting of the artillery barrage, the jump-off of assaulting troops, and the laying of protective smoke simultaneously perhaps saved many American lives.

And as it has been proved so many times in World War II, defenses no matter how stout, can be broken by superiority of weapons and fire power.

The remarkable efficiency of handling both prisoners and displaced persons along the routes of an advancing victorious army was the fruit of an intensive effort to establish a new conception in the organization of military police. Our experience in the old AEF indicated that a highly trained military police force could be of tremendous value to military operations. Up to that time military police were used simply to enforce discipline and the regulations to which troops were subject. A careful study of World War operations coupled with experience in the first maneuvers brought the concept of using military police for helpful control of military traffic moving to and during battle. For this purpose special training schools were established by the Provost Marshal General. Insofar as possible older men were selected for the training. The returns of this effort were especially rich in the drive across France which heavily depended on the forwarding of the troops and supplies which had been put ashore in Normandy. Later in the collapse of German resistance the military police performed miracles in regulating the dense, rather chaotic traffic on the roads, burdened with combat troops and their supplies surging forward and millions of prisoners and displaced persons straggling in the opposite direction.

*General of the Army George C. Marshall*

# Antiaircraft Artillery Guns in a Ground Support Role

LIEUTENANT COLONEL HOWARD P. PERSONS, *Coast Artillery Corps*  
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IN Tunisia no matter what caused the explosion it was always credited, correctly or incorrectly, to the omnipresent "88"—if a bomb had been dropped it was the JU-88, if a shell had arrived it was the 88-mm Flak gun. Greatly were both "88's" hated and respected by our ground troops. From the African desert, where the 88-mm Flak gun deployed in ambush played a crucial part in the destruction of some 230 out of 300 British tanks in a single battle, to the Elbe, the Germans used their medium antiaircraft gun in constant support of the ground battle.

Although well aware of the potentialities of our own 90-mm antiaircraft gun as a ground support weapon, we were unable to exploit its capabilities in this role until the gun was available in quantity sufficient to provide adequate local defense of the Field Forces and important ground installations against the enemy air threat. It was not until the winter of 1943, when our advance was slowed in the mud and mountains of Italy, that the degree of air superiority attained by our Air Force and the need for more and more artillery by the ground force made it possible for the antiaircraft artillery to put into practice the basic army doctrine that *artillery is never held in reserve*.

Born, as artillery, at Cassino, the 90-mm antiaircraft guns located in Corps zones, when not actively engaging hostile aircraft, thenceforth engaged in ground support with a vengeance. Quickly becoming famous as the "Baby Long Tom," these guns alone fired 40,000 rounds in Fifth Army's attack and breakthrough of the Gustav Line and materially assisted in the breakout at Anzio, neutralizing artillery, battering strongpoints and breaking up troop concentrations.

With no modification to gun or mount, the 90-mm M1A1 or M2 gun can readily be used as a ground support weapon, either to reinforce field artillery or to reinforce the antitank defense. It can be employed in a

dual role of primary antiaircraft defense and secondary ground support, or it can be employed solely in ground support—either as an artillery or antitank weapon. It should not be used in a dual role with the ground support role primary, and under no circumstances should it have an additional role when assigned to antitank defense. The 90-mm antiaircraft gun is most valuable when performing a dual role with the primary role as antiaircraft and the secondary role as medium artillery on general support and reinforcing missions—only then are its full potentialities realized.

In order to understand the value of this powerful weapon, let us examine its capabilities and limitations:

## Capabilities

**High rate of fire:** One battery (four M2 guns) is equivalent to one and one-half *battalions* (105-mm howitzers) of field artillery in volume of fire and weight of metal delivered, an important consideration in surprise fire where a heavy concentration at the target within the shortest possible time is desired.

**High muzzle velocity:** A muzzle velocity of 2,800 feet per second insures great striking power and makes the projectile inaudible on approach to the target, an effect very demoralizing to troops.

**Relatively long range:** An effective range of 18,000 yards as compared to an effective range of 14,000 yards for the 155-mm howitzer makes the 90-mm gun valuable as a general support weapon with the Corps or Division Artillery.

**Unlimited traverse:** A 360-degree traverse insures maximum flexibility.

## Limitations

**Ammunition:** 90-mm ammunition is of the fixed type; the powder charge cannot be varied to suit the mission as is possible with field artillery ammunition. The 90-mm projectile is light in weight and has limited

destructive power compared with field artillery guns and howitzers of similar range. It is more suited to neutralizing or harassing missions than to destruction missions. All types of fuzes (impact, time, VT, and concrete-piercing) are available for use with the standard antiaircraft ammunition.

**Flat trajectory:** While invaluable in direct fire (tanks, pillboxes, caves) a flat trajectory is a definite limitation for indirect fire whenever defilade is essential since the mask eliminates fire at short ranges.

**High silhouette:** A relatively high silhouette makes the gun difficult to camouflage and requires that the gun be dug in for protection. Positions are generally prepared in advance of occupation.

**Weight:** Routes over which the 90-mm can move are limited to Class 24. The gun crew can not manhandle the gun. Twenty minutes are required to emplace it in firing position (firing from the wheels is possible only as an emergency measure).

### Employment

**Dual role:** When the primary mission is to provide antiaircraft defense and the secondary mission is to provide reinforcing artillery fire, antiaircraft gun battalions deployed in forward areas habitually select position areas from which their primary mission can be accomplished with as little prejudice as possible to the accomplishment of the secondary mission. Control for the antiaircraft role is exercised in the normal manner through an Antiaircraft Operations Room (AAOR). Control for the field artillery role is exercised by the Field Artillery through a Fire Direction Center (FDC). In relatively stable situations the antiaircraft battalion (as the reinforcing unit) establishes communication with the nearest Field Artillery FDC, normally by wire line from the antiaircraft battalion FDC. In fast moving situations, control is decentralized and each antiaircraft gun battery (batteries are seldom located in the antiaircraft role less than 6,000 yards apart) operates its own FDC and runs a wire line to the nearest Field Artillery FDC (each battery in an antiair-

craft battalion might be tied in to a different Field Artillery FDC) (see Diagram I). From the Field Artillery FDC fire missions are assigned direct to the antiaircraft unit with which communications have been established. If the mission is within the battery's capabilities and ammunition allowance, the battery fires without further orders. If the mission is not a suitable one, the battery commander (or the battalion commander when a battalion FDC is operated) is authorized to refuse it. Observation of fire is conducted either by the field artillery ground observers or Air OP's (light liaison-type aircraft), or by antiaircraft ground observers trained in forward observer methods; the majority of the observing is normally done by the field artillery. Employment in this manner requires first, that all echelons be completely trained; and second, a comprehensive Standing Operating Procedure. In all cases complete understanding and liaison must be secured between the antiaircraft and the field artillery on all levels. The antiaircraft gun battalion commander (normally through the antiaircraft Group or Brigade) keeps the Corps or Division Artillery Commander constantly informed of his position areas, his dead areas, his ammunition status, and the results of all missions fired. The antiaircraft always has the final say, in the dual role, as to which missions will or will not be fired. After a little experience at working together, missions need seldom be refused. At first, however, the field artillery has the tendency, for example, to assign all night harassing missions to the antiaircraft so that the field artillery can sleep. The field artillery must be impressed with the fact that missions which they can perform should not be assigned to the antiaircraft, that the antiaircraft should only be called on to fire missions when additional artillery is needed either to increase the mass of fire, to cover an area that would otherwise have to be left uncovered, or to hit a target whose peculiarities call for this special weapon; in other words, that antiaircraft is to reinforce, not substitute.

ANTI-AIRCRAFT ARTILLERY IN DUAL ROLE

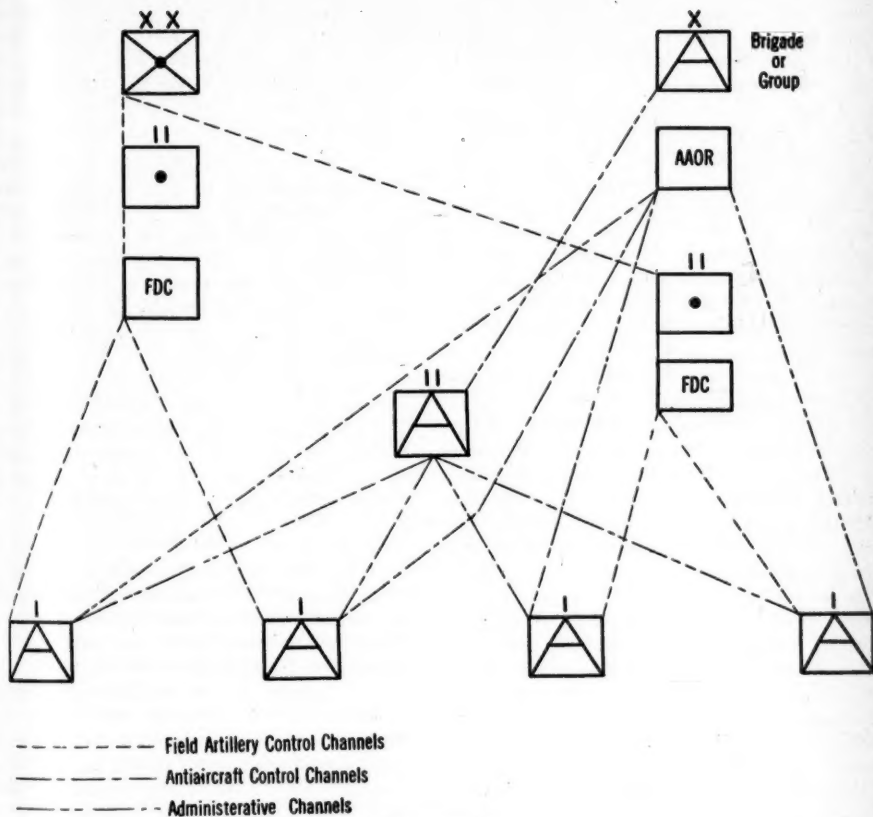


Diagram I.

**Ground role only:** To employ anti-aircraft guns in a primary field artillery or anti-tank role requires a command decision from the commander of the Division, Corps, or other major unit to which attached, since only the Commander can decide when air defense may be neglected in favor of other operations.

When the mission assigned an anti-aircraft artillery gun battalion is the artillery role,

the battalion will normally be used as *medium* artillery on general support and reinforcing missions and will operate as a battalion; control will not be decentralized to batteries. The battalion will function in every way exactly as though it were a field artillery battalion and its operation requires no further explanation here.

When the mission assigned an anti-aircraft artillery gun battalion is the antitank role,

the battalion will be employed similarly to the old Tank Destroyer Battalion, towed, except due to the limitations of the weapon it should be used only to reinforce the normal antitank means within the Corps, i.e., it should not be used in the first line of antitank defense, but rather should be disposed in depth to cover possible breakthroughs in the front line. Use of antiaircraft guns in this role is justified only in cases of emergency such as occurred during the battle of the Ardennes, where they were used to good effect. The only important points to remember in employing antiaircraft guns in an antitank role are: (1) that they must be deployed in ambush, (2) that they must be deployed at least in pairs and preferably by battery of four guns, and (3) that they are helpless against hostile infantry without our own infantry or engineer support.

*Direct fire role:* The 90-mm antiaircraft gun has demonstrated considerable ability as a direct fire weapon in this war particularly against Japanese caves and against pillboxes where its flat trajectory and high muzzle velocity were exploited. The accuracy of the weapon permits firing directly into cave mouths or pillbox ports and embrasures from distances as great as 1,000 yards. In the attack of a fortified zone, fire can be continued in order to deny the defenders the use of embrasures for returning fire until the assault parties have actually reached the fortifications. Batteries can be detached from battalion control, moved forward and assigned this type mission whenever the occasion demands.

*Roving gun role:* Our artillery in this war made little use of roving guns. Considering

the possibilities for deception alone, our failure to use such guns was a mistake. To use only one example—during the German winter offensive in 1944, we were forced to withdraw much artillery from the Dueren-Juelich sector for use in the Ardennes. High-ranking prisoners of war have stated that this fact could be clearly recognized. Had a few roving guns been employed in the old artillery positions, the enemy would have been deceived about the strenght of our artillery.

The 90-mm antiaircraft gun is an excellent weapon for use as a roving gun because of its high rate of fire, its relatively long range and its flexibility. To a limited extent this weapon was used in this role, particularly in the French sector of Sixth Army Group, where it was employed to harass German installations on the east bank of the upper Rhine. The effectiveness of this harassing fire was not lessened by the use of relatively few guns. Since the guns moved constantly, the Germans never knew from where or when the fire would come, or whether it would come in heavy volume for a short period or in less volume over a longer period.

### Conclusions

The 90-mm antiaircraft gun is a weapon which no commander desirous of utilizing all his available means to their fullest extent can afford to overlook. Whether used in its primary role as antiaircraft or used in a ground support role as reinforcing artillery or antitank, this weapon can render invaluable assistance and every staff officer of division or higher level should be fully conversant with its principal capabilities and limitations.

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This war has demonstrated completely that the resources of this nation in manpower and in raw materials are not unlimited. To realize this is to comprehend the urgent need for finding a way to allocate these resources intelligently among the competing services. This means designing a balanced military structure reflecting a considered apportionment of responsibility among the services for the performance of a joint mission.

*President Harry S. Truman*



# The Twentieth Air Force

LIEUTENANT GENERAL N. F. TWINING

Former Commanding General, Twentieth Air Force

IN announcing the Twentieth Air Force with General Arnold as its commander the War Department made this statement: "The Twentieth Air Force was created by the Joint Chiefs of Staff as the application of a new refinement of global warfare.

"The Twentieth Air Force will be in the nature of an aerial battle fleet, able to participate in combined operations, or to be assigned to strike wherever the need is greatest. Just as the naval fleets are available for assignment by the Joint Chiefs of Staff to any vital project, so the Twentieth Air Force can likewise be assigned. It is not, therefore, because of its great potentialities, the weapon of a single agency of the Army Air Forces, but a central aerial battle fleet in whose employment and deployment all the top commanders, including air, land, and sea, will have a voice, and all of whom will be kept in constant touch with its operations."

The story of the Twentieth Air Force and its employment in the war against Japan should provide the basis for thoughtful reflection on the part of any potential aggressor. It is a typically American story; its ingredients are foresight and ingenuity, dogged determination, the capacity for infinite labor and sacrifice, and the cold bright courage of American fighting men.

The Twentieth Air Force, though not formed until April 1944, and not announced until the strike against Japan in June of 1944, had its beginning in an idea of General Arnold's, as far back as 1939. He believed American defense called for a super long-range, hard-hitting land-based bomber. Even though these splendid airplanes, the B-17 and B-24, were just emerging from the assembly plants, he foresaw that they would be too small for the test to which American defense might be placed.

He envisioned aircraft which could reach out 1,000 miles from bases, carrying heavy loads of bombs. In that vision was the birth of the B-29, and the Twentieth Air Force. It

was the start of a chain of accomplishments which led to the dramatic morning six years later when the crew of a B-29 over Hiroshima watched the atomic bomb blast an end to the war.

In 1941 when Pearl Harbor plunged the United States into war, the concept of the B-29 was altered from that of a defensive weapon to that of a long-range heavy bombardment airplane. This necessitated radical changes in the designs and blueprints.

In 1942 the first B-29 was flown successfully by the late Eddie Allen, chief test pilot for Boeing. By February 1943 three experimental B-29's had been completed and the program well started.

Major General Kenneth B. Wolfe was directed to assume charge of the B-29 project. However, in that same month Eddie Allen and the entire test crew were killed in the crash of the first experimental B-29 at Seattle. With them went most of the accumulated knowledge of the mechanical complexities of the new plane. Another man might have thrown up his hands at this tragedy. Instead, General Wolfe suggested that they go ahead with the as yet unfinished plane, commit it to production, and work out the bugs as they developed; and to speed it into combat, start training crews, accumulating supplies, establishing the overseas bases, and getting the organization setup. General Arnold approved the plan.

On 1 June 1943, the 58th Bombardment Wing—first combat unit of the Twentieth Air Force—was activated and the actual training got underway. Just a year later, the 58th was to strike the first blow at the Japanese homeland since the strike led by Lieutenant General James H. Doolittle from the carrier *Hornet* in April 1942.

Those intervening months were grim, wearing, nerve-racking days and nights of incessant work, against formidable odds, and ever-pressing time. At the Cairo conference in November 1943 President Roosevelt had

promised the Chinese the strategic bombing of Japan would be undertaken from Chinese bases. He promised a definite number of planes and crews by a certain date. Chiang-Kai-Shek, in turn, promised the bases.

The bases were built. Planes and crews arrived in India in April 1944. B-29's landed on Chinese fields later in the month.

More remained to be done. Supplies had to be flown into the forward bases in China. For every plane to take off against the Japanese, twelve round-trip flights across the Himalayan Hump had to be made. On 15 June the B-29's lashed out at Yawata, and the Twentieth Air Force was announced.

And even as the XX Bomber Command planes were hitting at Yawata, the XXI Bomber Command was gathering its staff and training crews at bases in Kansas and Colorado. At the same time the Marines, acting under orders of the Joint Chiefs of Staff, were storming ashore on Saipan to secure the bases from which the XXI Bomber Command was to operate.

With the B-29 and the Twentieth Air Force translated from vision to actuality and the first strike against the enemy's homeland complete, General Wolfe returned to the Materiel Command as its commander.

In August Major General Curtis E. LeMay arrived in the China-Burma theater to assume command of the XX Bomber Command. That same month General Hansell assumed command of the forming XXI Bomber Command with Headquarters at Peterson Field, Colorado. His post as chief of staff of the Twentieth was taken by Brigadier General Lauris Norstad.

The early months of operations by the XX Bomber Command were, primarily, months of aircraft and men getting to know each other. But the Japanese were getting to know them, too. The Japanese homeland, Manchuria, occupied China, the stolen empire of Malaya, Burma, Dutch East Indies—all these felt the weight of the mounting assaults. And, over this empire of the enemy, the winking eyes of the reconnaissance cameras began to lay bare secrets of the Jap's war machine; it is interesting to note that

the XX Bomber Command flew more photographic reconnaissance missions than actual bombing sorties.

In the meantime, the Marianas conquest had been completed. Steam shovels and bulldozers were tearing the coral from the pits by day and night to lay the runways for this second phase of the Twentieth operations. This phase was awaited eagerly. The Marianas, on a main water-borne supply line, would have little of the worries about gasoline, bombs, and spare parts, so well known by the XX Bomber Command.

In October, General Hansell brought the first B-29 to the Marianas. The planes of the 73d Wing, commanded by Brigadier General E. O'Donnell, soon followed. Even as they settled down on Saipan from their incoming voyage, the steam shovels, bull-dozers, and other equipment of construction were going full blast on Tinian and Guam. Construction in the Marianas called for eleven landing strips and hundreds of hardstands. At Tinian the world's greatest military airport was to be constructed.

Then, on 24 November, just three days after the China based planes of the XX Bomber Command under General LeMay had struck at Omura in their eighteenth mission, the Saipan based planes of General Hansell hit Tokyo. The air battle of Japan had joined.

The Twentieth Air Force, on moving into battle, had been given this broad directive from the Joint Chiefs of Staff:—"the earliest possible progressive destruction and dislocation of the Japanese military, industrial, and economic systems, and to undermine the morale of the Japanese people to a point where their capacity for war is decisively defeated." It also had been generally bound to support the broad Pacific offensive, as I have already indicated.

The Joint Chiefs of Staff had instructed that its planes be directed against coke and steel, aircraft, oil, and shipping targets, and against the urban industrial areas of Japanese cities. The priority of target: (1) Aircraft, (2) Urban industrial areas, (3) Shipping.

Two phases of this directive had been ac-

complished, and the third was starting when the Japanese surrendered.

The XX Bomber Command, due to the tremendous problems inherent in supply and operational bases, had been forced to vary this order. But the XXI Bomber Command, with no such problems, went to work immediately on classification number one.

Even before the bombers themselves were unloading their cargoes, the cameras of the Third Photo Reconnaissance Squadron had been prying loose the carefully guarded secrets of Jap factories, their size, and location. One B-29 of the photo squadron was the first over Tokyo. Pictures taken gave precise information about installations about which no accurate data were available.

The vast Mitsubishi aircraft works at Nagoya and the Nakajima Musashino aircraft engine plant near Tokyo were selected as top priority targets. It was against these installations that the XXI Bomber Command's first missions were directed.

At this time the XXI's own bases on Saipan were under attack from enemy planes based on Iwo Jima. Before this forsaken lump of sulphurous rock had been subdued twelve B-29's had been lost on the ground. In the neutralization and later conquest of Iwo Jima all forces played important parts.

In January 1945 General Hansell set up his headquarters on Guam, moving from Saipan where he had been directing operations since the strike against Tokyo. At Tinian, bases were completed and the 313th Bombardment Wing was moving into position. On Guam, aircraft of the 314th Wing were arriving.

But the problems of the Twentieth Air Force in fulfilling its mission against the Japanese still were plentiful. In China the problem of supply was acute as ever, though the outstanding efforts of the Air Transport Command had relieved some of the burden of freighting gas and supplies over the Himalayan Hump. In the Marianas the XXI had run into a new and formidable enemy—weather. Between the islands and Japan, the air crews encountered weather as variable as the Japanese themselves.

Crewmen from the Marianas faced a 3,000-mile round trip, all over water, with fierce resistance by enemy fighters and antiaircraft. With the long watery route back to the base a plane damaged was almost as bad as being shot down over the target. Early ditchings were apt to be fatal.

But difficulties of supply in China, weather over the Pacific, and resistance over Japan did not stop the blows. These blows were falling with increasing rapidity and weight on the Japanese home islands and on the occupied territories of Manchuria, China, and the East Indies.

Early attacks had caused a dent in Jap aircraft production and on 19 January a major blow to that production was dealt by General Hansell's men when they blasted the Kawasaki Aircraft Company plant at Akashi, near Kobe. From this attack the Kawasaki factory never recovered.

On 20 January General LeMay was placed in command of the XXI Bomber Command in the Marianas and Brigadier General M. Ramey, the XXI Chief of Staff was given command of the XX Bomber Command in India-China.

In the next few weeks the integration of the Twentieth Air Force with other forces in the Pacific was clearly demonstrated. The Iwo Jima campaign was imminent and the B-29's joined with other forces in the softening-up process. In addition to bombing attacks on the Iwo Jima airfields and fortifications the XXI Bomber Command attacked Nagoya providing a diversion for the fleet as its carrier-based aircraft attacked Tokyo and surrounding airfields on 15-16 February.

At the same time, aircraft of the Twentieth Air Force Photo Squadron, far to the west, were searching Okinawa's secrets.

During these weeks further blows had been given the Jap. The floating drydock at Singapore was blasted, as was the Rama VI railroad in Burma. In addition, the airfields and aircraft production facilities on Formosa had been effectively neutralized. The XXI Bomber Command 29's had put a further crimp in Nip plane production with a thorough blast-

ing of the Nakajima Ota plant near Tokyo.

Then on 25 February Japanese cities got a warning of what was to come. More than 200 B-29's, representing three wings, joined to hit Tokyo urban-industrial areas. What seemed to be a vast area, one square mile, was destroyed. March 4 was an important day to the men who flew the 29's—the first Superfort landed on Iwo Jima. The long "sweat" home was over for the crews. Up to the end of the war the crews of more than 2,000 Superforts were to find haven there.

The ten-day period, 10-19 March, broke the Jap back. Making one of the great tactical decisions of the air war, General LeMay sent in the force at altitudes of from 5,000 to 10,000 feet at night to sear and burn the heart out of Japan's key cities.

These blows were the real turning point of the air war against Japan.

March saw the beginning of another operation which was to surprise, bewilder, and strangle the enemy. Working in close cooperation with the Navy, the B-29's of the 313th Wing began the systematic mining of the home waters of Japan. These operations were to extend and grow until even the closed waters of his Inland Sea became a death pond, and supplies for homeland piled up on the docks at Korea.

In March the Twentieth Air Force had come of age. Its fleets numbered more than three times the original force. Its crews and planes had been battle tested and battle proved.

On 7 April the first fighter-escorted mission was flown by P-51's rising from the still bloody dust of Iwo. The target was Tokyo. On the same day another force of B-29's laid to rest an old enemy—the Mitsubishi Aircraft engine factory at Nagoya. This factory, the largest in the world, was ninety-four per cent destroyed.

In the period between 17 April and 11 May the second part of the directive from the Joint Chiefs of Staff was completed. The attack on Okinawa had been started. The battle-ships, carriers, and cruisers of the Pacific fleet, supporting that operation, were feeling the sting of the Jap suicide planes. To ease

these attacks, the XXI Bomber Command carried out ninety-three separate attacks against the airfields of Kyushu and Shikoku in the attempt to rob the enemy of the bases from which the suicide attacks were launched. A total of 7,850 tons of bombs was dropped on these targets. During this period eight strategic bombing missions were flown.

One of these had definite significance. On 5 May the Hiro Naval Aircraft factory, near Kure, was heavily blasted by planes of the 73d and 58th Wings. The 58th Wing, originally based in India and China, had been transferred quietly to the Marianas, bringing the battle-wise accurate bombing crews who had full supplies that they had longed for. The force was now all together.

By this time the blows of the Twentieth Air Force had seriously crippled Japanese production. Accordingly, attention was switched from aircraft to oil and on 10 May the Japanese Navy lost its fueling stations, storage tanks, and refining facilities at Tokuyama, Oshima, and Otake.

Then, on 14 May, the B-29's, numbering now more than 500 started another series of incendiary attacks that were to remove the cities of Nagoya, Tokyo, Osaka, Kobe, and Yokohama from the list of targets.

The air force was in full swing. Using varying tactics, various bomb loads, hitting by day and night, mining, blasting, and burning, it ranged over Japan at will. In June, the smaller cities began to wither and die under the rain of incendiaries. The critical industrial targets such as the Nagoya Arsenal factories, the light metal plants at Osaka, the Kure Naval Arsenal and the rest of the aircraft plants—these became heaps of rubble.

On 26 June, the specially trained and equipped 315th Wing under Brigadier General Frank Armstrong went into action with Japan's remaining oil and gasoline resources as its list of targets. In a period of less than two months the 315th Wing had destroyed the cream of these targets.

During July the Twentieth Air Force B-29's were like locusts over the land. They celebrated the Fourth of July with more than 550 Superforts in the air. During July, just thir-

teen months after the first attack on Yawata by less than 100 airplanes, the Air Force flew more than 6,500 sorties and dropped 42,000 tons of bombs and mines. By now 600 B-29's were able to take the skies on simultaneous operations.

On 5 July General Carl A. Spaatz took command of the Strategic Air Forces in the Pacific, with headquarters on Guam. Lieutenant General Barney M. Giles became his deputy commander. The XX and XXI Bomber Commands were inactivated and became the Twentieth Air Force. The Strategic Air Forces were to embrace the Twentieth and also the Eighth.

On 2 August, I took over the Twentieth when General LeMay went to USSTAF as Chief of Staff. On 6 August the atomic bomb fell from a Twentieth Air Force B-29 over Hiroshima, and to all purposes the war was over. In the fourteen months of its operation the Twentieth had ranged from Sumatra to the borders of Russia and from India to Marcus Island—an area of more than 10,500,000 square miles.

Three hundred sixty-five regular scheduled bombing and mining missions had been flown against the Japanese, excluding those against Truk. In addition, thousands of miscellaneous missions—weather, photographic, rescue, training—had been flown. Approximately 170,000 tons of bombs and mines had been dropped. An aggregate of 32,636 flights by individual aircraft had been executed. Four hundred twenty-three B-29's were lost, and 293 crews on these flights.

Sixty-seven Japanese cities, representing populations of more than 20,000,000 had been attacked. The major portion of the industrial capacity of sixty-one of these had been destroyed. The Japanese themselves said that almost one-sixth of home island populations had been casualties or made homeless.

Almost 600 important factories were either destroyed or damaged. Included were twenty-three major factories of Japan's aircraft industry, destruction of which resulted in an estimated sixty per cent reduction in production. Included also were five of Japan's major arsenals, two plants producing tetraethyl

lead, two major steel plants damaged to the extent that Japan's steel capacity was reduced measurably, as well as fourteen oil storage and refinery installations. In the air, 2,334 Japanese aircraft were destroyed, while an additional 1,034 were destroyed on the ground, a total of 3,368. Some 12,998 mines had been sown in enemy waters; these caused destruction or damage of up to 1,000,000 tons of shipping.

At the end of the war, the Twentieth Air Force still had not reached its top strength. Plans were under way which would have put more than 1,000 B-29's into the air at one time. Five wings were in full operation from bases on Guam, Tinian, and Saipan. The largest air depot in the world was supplying these bases from Guam. The staging area at Iwo had gone into operation and B-29's staging from Iwo runways had brought all points in the Jap homeland within reach. The Seventh Fighter Command under Brigadier General E. Moore had become a part of the air force, and could put more than 300 long-range fighters into the air.

As a part of the Strategic Air Forces, and in conjunction with the Eighth Air Force the Twentieth was at war's end ready to bring Japan such destruction as the world had never seen.

I cannot close this brief history without paying full tribute to all branches of our armed forces, and those of our allies which made the Twentieth. Army engineers and Chinese civilians built our bases in China. Air Transport Command pilots dared the Hump to fly in our supplies. Fighter pilots of the Fourteenth Air Force flew cover over our China bases. Marines, Army, and Navy men died to take our Marianas bases and Iwo Jima. Crews of submarines, Navy vessels, and airmen risked death time after time to rescue our crews from ditched aircraft. Seabees and aviation engineers accomplished construction feats outclassing the building of the Pyramids. All these, and thousands of others played their parts with splendid unselfish cooperation, giving everything they had.

To the Joint Chiefs of Staff, the Twentieth Air Force can report: "Directives carried out."



# Think It Over

COLONEL HENRY J. SCHROEDER, *Signal Corps*

Chief of Personnel Division, Command and General Staff School

A wide range of opinions exist as to how the division G-1 should function under combat conditions. His many activities have little apparent relation to each other, except that they require *individual* treatment and application to military personnel. It is the individual who is G-1's concern.

If we analyze G-1's various functions, we find this individual treatment constantly stressed. Personnel record files eventually break down into separate cards each carrying different entries and pertaining to individual men and officers. Replacements are, or should be, selected individually for the specific MOS [military occupational specialty] vacancies they are to fill. Pay is delivered to the individual, and after allotments and deductions, different sums are paid to each individual. Mail is eventually delivered letter by letter to the individual to whom addressed. Recreation, religion, and welfare assistance are matters of individual choice. Battlefield graves are marked with the name of the individual. The viewpoint could be expanded at length.

However, to deal individually with the individual problems of some 14,000 men and officers in a division is obviously beyond the capabilities of one division G-1. He must decentralize. He deals with personnel problems by establishing broad policies for management of personnel. He sets up personnel plans well in advance, which, when approved, are carried out by a varied number of special staff sections, special troops, and commanders of subordinate units. The subordinate commanders deal with individual men and officers, but in conformity with the general personnel plans and policies of the division commander, as drafted by the G-1.

These personnel policies and plans, while usually originating in the G-1 section, must be coordinated with the other staff sections and the commanders concerned. Such coordination requires more than the usual care and study. Personnel plans, when approved

by the commander and translated into orders, usually affect the individual daily lives and habits of widely diversified groups of individuals, each with his own separate views, hopes, and ambitions.

Poorly planned, unjust, or impractical personnel plans and orders breed discord and make for general inefficiency. Wisely planned personnel orders, which fill definite needs, or correct injustices, or alleviate hardships, assist in building up the spirit and combat effectiveness of the units of the division.

Let us see how a G-1 of an infantry division functions during combat. Let us examine the mechanics or techniques of personnel section planning. To do this, let us assume that G-1 is making a formal estimate of the division personnel situation as of two days before a resumption of the attack in a general offensive operation. First let us examine the Personnel Estimate Form in general (see pages 71-75). The following is a brief summary of the five paragraphs of the G-1 estimate form:

**Paragraph 1. MISSION.**—Mission of the command, and of the personnel section supporting the command mission.

**Paragraph 2. SITUATION.**—Tactical considerations including enemy capabilities and dispositions of our own forces; logistics dispositions affecting personnel; the personnel situation including current factual personnel data with present and impending personnel problems indicated.

**Paragraph 3. POSSIBLE LINES OF ACTION.**—Elements of the personnel situation requiring action with feasible lines of action to meet these current and impending personnel problems.

**Paragraph 4. COMPARISON OF LINES OF ACTION.**—Advantages and disadvantages of lines of action in Paragraph 3 above.

**Paragraph 5. CONCLUSIONS.**—The recommended lines of action; when coordinated and approved, these constitute the personnel

## FORM No. 1—STAFF ESTIMATE OF THE PERSONNEL SITUATION

COMMAND AND GENERAL STAFF SCHOOL

95 Inf Div  
(Unit)KOMONO (123-456)  
(Place)1800, 9 Aug  
(Hour and Date)

Map:\*

## 1. MISSION.—State the mission of the Command.

To furnish personnel support for the division activities with emphasis on the attack N, 110700; take objective 8 mi to N, then prepare for further offensive action.

## 2. SITUATION.—All circumstances affecting personnel, to include:

## a. Tactical Considerations:

## (1) Enemy.—(Information from Intelligence Section):

## (a) Enemy capabilities affecting personnel plans.

1. Present disposition and actions of enemy's forces. See Map: \* Enemy division,  $\frac{1}{2}$  strength, somewhat disorganized. Units: See G-2 Report, \* 8 Aug.

2. Minor capabilities—(Sabotage, air or ground raids, etc., likely to affect personnel plans)  
Enemy infiltrates and raids each night; possible small parachute suicide raids especially near CPs and supply areas; enemy takes few prisoners, leaves few wounded; uses snipers, mines, booby traps and civilian disguises.

3. Fight stubborn delaying actions on successive lines.

## (2) Own forces.—(Information from Operations Section).

## (a) Present disposition of major elements. See Map A. \*

## (b) Probable Tactical Developments.

1. Atk N, 110700 about 8 mi to objective.

2. Period estimated to carry out above: 3 days.

3. Expected locations of major elements of the command at intervals during the period: about  $2\frac{1}{2}$  mi advance each day.

4. Probable nature of attack at intervals during period:

1st day—Jungle fighting against prepared positions.

2d day—Attack continued. Limited pursuit to flanks.

3d day—Hard fighting to take prepared position on hill.

## (3) Logistic dispositions affecting personnel plans.—(Information from Logistics Section):

1. See G-4 overlay. \*

---

**ATTACH PERSONNEL SITUATION MAP OR OVERLAY HERE**

\*Omitted; not required for an understanding of the use of the form.

## b. The Personnel Situation.—Factual data and status of:

- (1) Troop Strengths and Locations.—(Indicate present troop strengths, and locations.)  
Div Periodic Pers Rpt, Station List, 9 Aug.\* Div Sta List, 9 Aug.\*

(2) Replacements.—(Shortages—present and anticipated, requisitions, depots, credits, processing, forwarding.)  
800 replacements (750 Inf, 50 FA) to Div Rr Ech 101200. 421 replacements still on requisition.  
Replacements usually arrive on fourth day after requisition. Some replacements have been on requisition for over six weeks. Summary of losses between landing on 3 Aug to present situation. 10 Aug: (See G-1 report 082100\*).  
901 Repl Bn 6 mi S of Rr Ech, KUMO.

- (3) Law and Order.—(Stragglers, collecting points, AWOLs, discipline, military police, military justice.)

## Stragglers:

- (a) On hand: 43.  
(b) Processed daily (est): 75.

- (4) Prisoners of War.—(Numbers, safeguarding, collection points, evacuation, utilization, orienting own troops.)  
(a) On hand: 124.  
(b) Taken daily (est): 300.

- (5) Burials and Graves Registration.—(Organization, cemeteries, burials—numbers, records and reports, effects, labor.)  
(a) Uncompleted: US—100, enemy—1,000, civilian (est)—5,000.  
(b) Daily killed (est): US—60, enemy—1,500, civilian—1,000.  
(c) GR Units: none.  
(d) Labor: 100 voluntary civilians.  
(e) Cemeteries: One near Div Rr Ech. See Map A.\*

- (6) Morale.—(Status of morale, postal and courier service, rest areas, special services, motion pictures, radio broadcasts, USO, army exchanges, army periodicals, leaves and furloughs, welfare services, decorations and citations, religious activities, sanitation and hygiene.)  
(a) Mail: Unrestricted.  
(b) Sanitation and Hygiene: Water-borne diseases on increase.  
(c) Morale: Good but deteriorating as combat is prolonged.  
(d) Furloughs: Rotation: none.  
(e) Pay: Last, 1 July.  
(f) Discipline: Good but slackening.  
(g) Decorations: Only those approved by Div CG and Purple Heart.  
(h) Religious Affairs: Chaplains visit small groups daily.  
(i) Adjustments, promotions, etc.: None.  
(j) Repatriated PWs: About 15, evacuated to hospital.

## 3. POSSIBLE LINES OF ACTION.—List elements of the Personnel situation requiring action, together with feasible solution to each.

\*

- Plan 1. Requisition for known losses at once.  
2. Requisition for losses after reaching Obj 121200 Aug.  
3. Requisition for losses after withdrawal from line about 151800 Aug.  
4. Combination of 1 and 3.  
Forward 800 replacements due today to Regtl trains area night 10/11 Aug to bring Regts to equal strength.

Move Straggler Line N to BAK R, following FA:  
Call Pt AGOYA; Posts at fords.

Move PW Coll Pt Br N YAMA.

Cemetery: 1 mi N MAGO.

\*

4. COMPARISON OF LINES OF ACTION.—State advantages and disadvantages of each line of action listed in Par 3.

5. CONCLUSIONS.—a. State conclusions, decisions, or recommended action for each of the several personnel activities listed under 3. They should include as many of the elements of "what," "where," "who," "how," "when," and "why," as may be appropriate. b. State notable deficiencies.

\*

(1) Troop Strengths and locations. \*

1. Takes about four days minimum for replacements to arrive. Saves time, absorbs replacements gradually.
2. Too late.
3. Too late.
4. Furnish immediately assistants to supply units; replacements absorbed gradually.

(2) Replacements:

1. Allot 800 Repls to Regts and FA Bns to bring units to strength.
2. Requisition for known losses 111200 Aug.—Repls to rehabilitation area, 15 Aug.
3. Requisition again 132100—Repls to rehabilitation area, 17 Aug.
4. Data to Adm O.

River is natural drift barrier.

(3) Law and Order: \*

On main road; near forward Div CP.

(4) Prisoners of War: \*

Central—Junction of roads and trails.

(5) Burials and Graves Registration: \*

\*

(6) Morale: \*

- (7) Civil Affairs.—(Population density, control, military government, collecting points, MP units, security measures, food, medical care, supplies, pay.)

- (a) Population density: About 1,000 per sq mi.  
 (b) Attitude: Frightened and hostile, Unco-operative.  
 (c) Control required: Must be constantly on guard. See Div SOP, Civil Affairs, 23 July.  
 (d) Proclamation 3 Aug. prohibits circulation: little effect.  
 (e) Div Civ A Det 2-O, 9-men.

- (8) Personnel Procedures and Adjustments.—(Classification, assignment, promotion, flying evaluation, reclassification, army publications.)\*

- (9) Personnel Estimates and Plans.—(Personnel economy measures, manning table, area organization, quartering and billeting, personnel allocations.)\*

- (10) Civilian Employees.—(Sources, procurement, utilization and management, relation to civil affairs, relation to troops.)\*

- (11) Personnel Records and Reports.—(Time of submission, period covered, form, channels, status reports.)\*

- (12) Terrain and weather.

Jungle valley, volcanic mountains on flanks; few roads, many wandering trails; units and individuals get lost easily; maps abundant but only fair accuracy and information; streams swollen.

#### CONCURRENCES \*

Chief Personnel Section

APPROVED: C of S

section plan. This arrangement is similar to that of the commander's estimate.

A G-1 personnel estimate would probably never be completely written out. It does offer a guide to a logical mental summary of personnel facts and data; a review of the problems to be met, an analysis of the merits of the methods of solving these problems, and finally, conclusions or a proposed personnel plan. With minor changes in content, it could be used in a similar way, by personnel section chiefs of any type units and of any arm or service. Use of the form does encourage orderly thinking, assists in ar-

iving at logical conclusions, and produces workable plans.

Much of the technical and operational procedure connected with and resulting from personnel planning is not found in this estimate. Such procedures are contained in field manuals, and in division standing operating procedures (SOP's) on personnel activities. The estimate stresses general staff plans as to time, place, volume, and policy, rather than administrative procedure (see pages 71-75).

The above estimate analyzes personnel conditions for a given future period of time and



(7) Civil Affairs: \*

(8) Personnel Procedures and Adjustments: \*

(9) Personnel Estimates and Plans: \*

(10) Civilian Employees: \*

(11) Personnel Records and Reports: \*

(12) *Adequate Support.*—(Indicate whether or not this recommended personnel plan will adequately support the tactical line of action under consideration.)  
Adequate to support action to 121200 Aug.

(13) *Unavoidable deficiencies.*—(State unavoidable deficiencies in the plan, if any.)  
Unable to completely search battlefield by 14 Aug and bury enemy dead.

(14) *Future difficulties.*—(State probable effect of major adverse conditions on the plan and alternative measures necessary to overcome them.)  
(a) Aggressive action is required to procure replacements promptly in period 12-20 Aug.  
(b) Enemy may decide to make an all cost stand, call in reserves to delay the outcome several days. In this event, replacements will be asked for to arrive 13 Aug in rear of combat area.

assists in setting up a plan for the problems which already exist or can be foreseen, by experience, study of report, or staff visits to the subordinate units. This estimate carries a date and hour. Obviously, personnel conditions change and sometimes rapidly. The estimate must be correspondingly revised with these changes and conditions. As was indicated above, the estimate when written out at all is usually in rough draft form and can readily be kept up to date by corrections

in the data, changes in lines of action, and modifications of the proposed conclusions or plan. Periodically a new estimate form is prepared. This is usually done when a new set of personnel plans are initiated, or a new line of tactical action. For example, the division may change from offensive to defensive or withdraw from the line. Several days in advance of this contemplated change in mission a new and up-to-date personnel estimate form would be initiated.

# Care of Ammunition

LIEUTENANT COLONEL NORMAN W. REMLEY, *Ordnance Department*  
Instructor, Command and General Staff School

"COLONEL, this is but the small part of the Class V supplies which the Army left us when they moved up. As you see, it is in very bad condition. We will be able to renovate only about half of it. There will be several thousand tons that will have to be destroyed," said the commanding officer of an Ammunition Renovation Platoon to the commanding officer of an Ammunition Depot being organized just behind the Army area in the Communications Zone.

"Yes, and think of all the shipping that was used getting it over here when shipping was critically needed for trucks and the many other items on our shortage list. A large part of this ammunition certainly failed in its mission," was the reply.

There were several reasons why much ammunition in the various active theaters had to be destroyed as being unsafe to fire, and much more required a certain amount of renovation. Possibly, the outstanding reason was that proper care in handling, shipping, and storage had to be made secondary to expediency. There are other good reasons for the loss, such as an insufficient number of ammunition units for proper storage, inspection and renovation; insufficient storage space available to provide adequate dispersion; and the fact that usually the construction of adequate shelter, hardstanding and drainage was not feasible.

There are other reasons for rapid deterioration that likely could have been avoided. For example: Much ammunition was abandoned or turned in by using units because the containers had been opened and the contents carried around without containers for a considerable length of time. Thousands of rounds of various types were destroyed because there were no means of reclamation available. Lack of adequate control of issues sometimes permitted the using units to overstock, and even to leave what appeared to be a large number of ammunition dumps scattered over the former division area. Im-

proper handling and loading by port units, quartermaster service units and labor troops, caused a large number of wooden crates and cases to be broken. Many powder cases of fixed and semi-fixed artillery ammunition were badly dented. Grommets were pulled off resulting in burring of the rotating bands. Base plates on high explosive separate loading shells were frequently cracked. Provision for prompt repacking would have, in some cases, taken care of ninety per cent of the renovation and reclamation problem.

Some early shipments in the Mediterranean Theater had as high as twenty-five per cent of the cartridge cases of artillery ammunition so badly dented as to be unserviceable. Metal ends of fiber containers for 155-mm propelling charges were often knocked off and then carried for some time awaiting use. Moisture would then render the charges unserviceable. In Normandy, stacks of ammunition sank well into the ground because of the unavailability of dunnage and hardstanding. In the Central Pacific, white phosphorous smoke shells were exposed to too hot a temperature while lying down, resulting in the filler melting and later resolidifying and causing the projectile to become eccentrically loaded. The shell, being out of balance, would give very erratic results when fired.

At the present time and throughout Period II and Period III, proper care in handling, shipping, and storing must be enforced, as expediency is not so essential and relatively large permanent reserves of ammunition stocks will be stored, with a much slower turnover. Safety must be the rule—a hard and fast one—not only in the Zone of the Interior but also in the occupied areas.

All ammunition stocks in the various theaters should be carefully inspected by ordnance personnel each time they are handled in order to destroy all unserviceable ammunition that cannot be economically reclaimed, to replace or repair damaged crates

and containers, and to effect prompt renovation if required and feasible. Destruction of some stocks will be necessary to reduce the hazard of accidental detonation and to avoid unnecessary handling and shipping of practically worthless material. Repacking should reduce the amount of damage as result of reshipping and aid in retarding further deterioration. Prompt renovation will stop or retard deterioration and thereby lessen the labor that will be required for the renovation process.

Personnel must be impressed with the importance of correct ammunition handling. Careless handling will result in denting or breaking of containers. Moisture will corrode the contents of a broken container in a relatively short time. Containers should in no case be dropped. Men should be reminded of the fact that boxed rockets may explode if dropped several feet. Officers and noncommissioned officers must rigidly enforce ammunition handling discipline in order to prevent unwieldy accumulations of unsorted stocks and to prevent large quantities from becoming unserviceable.

Most accidents involving demolition bombs leave but little evidence and few close witnesses to determine the cause of the accident. However, from near accidents and observations of common mistakes, the following have been advanced as the most probable causes of accidents:

1. Rough handling of fuzed bombs.
2. Use of oversize slings in hoisting bombs.
3. Failure to inspect fuze cavities before fuzing.
4. Rough handling of bomb bodies in shipping and in delivery to landing strips.

It can therefore be seen that with proper handling a great reduction in accidents involving bombs should result. Similar reduction in the number of accidents involving other types of ammunition could be effected by proper care in handling. Familiarity normally breeds contempt. A system of rotating labor shifts, designed to prevent the overtaxing of personnel, will help to reduce casualties as well as damage to ammunition containers resulting from careless handling.

In shipping, the truck and railroad car, together with the dunnage used, should be inspected for protruding nails, and the nails removed. The truck or car should be swept clean of all forms of debris and inflammables. During loading operations, the car and magazine doors should be closed when locomotives or speeders are passing. Loaded cars and trucks should not be spotted or left parked in the open area between magazines or stock piles as they may act as an intermediate step in propagating an explosion. It may seem unnecessary to caution guards placed on rail shipments that they must not smoke, or use canned heat or any type of gasoline or kerosene stove in or near cars containing ammunition, but accidents still occur with such violations as the cause.

During the loading or unloading of ammunition on ships, the safety regulations for open fires, stoves, gasoline, matches, smoking, etc., should be strictly complied with. Decks, runways, and docks should be kept free from dirt, rubbish, and spilled explosives. Keep ammunition as far from the boiler room as possible.

Separate loading projectiles, if shipped lying flat, should have rows alternated so that the base or the lifting plug of a shell in one row is in contact with the same part of the shell in the adjacent row or rows, in order to guard against cracking the base plates. Shells with cracked base plates can not be fired due to danger of premature detonation of the bursting charge.

Storage of ammunition and other explosives probably presents a greater problem than the storage of any other type of material, due to the hazardous nature of the material itself and because a very small fire or explosion may be augmented in a very short time into a tremendous disaster. Ammunition improperly stored is a distinct hazard and menace to life and property. An explosion, in incorrectly stored material, seems to love company. If proper distances between different types of ammunition are not observed whole storage areas may be lost; whereas, had minimum distance be-

tween stacks and groups of stacks, together with the maximum quantity in the group of stacks, as set forth in Technical Manual 9-1900, been adhered to, only the material involved in the original fire or explosion would have been lost.

While combat units in the various theaters were actively engaged and a quick turnover of ammunition stocks occurred, covered storage in the theater was not usually provided. Now, provisions for covered storage must be made for such stocks as will be retained for use of occupation troops.

Smokeless powder becomes dangerous when it has deteriorated. Normally, this deterioration proceeds very slowly and the powder remains serviceable for years. But under unfavorable storage conditions, where the powder is subjected to temperatures above 80° F. or is exposed to moisture, the rate of deterioration is greatly accelerated. Obviously, then, ammunition, and particularly smokeless powder, must be protected from heat and moisture while in storage.

Fiber containers, in some locations, have been attacked by ants and contents soon damaged by moisture entering the containers through the holes made by the ants. Fiber containers that have been alternately soaked by rain and baked by strong sunlight will swell and crack. It is estimated that fully fifty per cent of all pyrotechnics available to the XXIV Corps during the Leyte operation became unserviceable because the packaging was subjected to more moisture than it was able to withstand.

If it became necessary for a short time to store small-arms ammunition in the open, the cases should be stacked upside down; otherwise, moisture would seep through the lid, collect on and corrode the solder joining the cover to the metal liner, and soon reach the cartridges.

When ammunition is stored in magazines, it and the containers should be free of loose

dirt and grit. Any corrosion, mold or rust found present should also be removed. Damaged containers should not be stored in a magazine. Such containers should be repaired or the contents transferred to new or serviceable containers. Such repair or transfer should not be done in the magazine, but in a building or shed located at least 100 feet from the magazine or building containing explosives. Containers that have been opened should be closed again as securely as when originally packed. Containers should be at least two inches off the floor to provide circulation of air.

All magazines should be inspected at least once each month and some more frequently. It is difficult to prevent the deterioration of material but with inspections at proper intervals, deteriorated stocks may be segregated and disposed of before they do any damage. When a temperature of 80° to 85° occurs in the magazine for more than two days, something must be done to cool it. Adequate ventilation must be provided. While exudate is not as common as formerly, it is still sometimes found and, being an inflammable material, constitutes a real hazard unless removed almost as soon as it appears. Magazines should be kept clean and free of unused dunnage.

The amount of combustible materials in vicinity of ammunition stocks should be held to a minimum. Extreme vigilance must be observed around all storage areas to prevent fires from starting. In the majority of cases it is perfectly safe to fight a fire in an ammunition area *provided* fire-fighting crews can go into action immediately and get the fire under control.

In conclusion, the ammunition that was obtained for the destruction of the enemy and protection of the owner, if not properly handled, stored and maintained, may be found to be useless to its owner, or even to destroy him instead.

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Unity of command is not alone sufficient. Unity of planning, unity of common item procurement and unity of doctrine are equally necessary.

General of the Army Henry H. Arnold

# MILITARY NOTES

## AROUND THE WORLD

### SWEDEN

#### **Sweden's Future Fleet:**

The enormous development of aerial bombing during the war has greatly altered plans for the Swedish Fleet. In Sweden's narrow navigable waters, which would be dominated by bomber planes based at the Baltic or west coast ports, naval operations against an enemy having air superiority would be possible only in darkness or fog, where ships in their turn are superior to their winged opponents. Difficulties of protecting warship bases against annihilating aerial attacks have also become very great.

In line with this trend, Rear Admiral Gunnar Björner recently proposed a ten-year construction program beginning 1 July 1947 to continue the present five-year plan, in the course of which the Swedish Navy acquired ninety new ships, most of them small. Two 7,000-ton armored destroyers recently completed are the only heavy units planned.

The new ten-year program includes six coastal destroyers, twelve submarines for the high seas, twelve large and thirty-six smaller motor torpedo boats, partial modernization of the three armored ships of the *Sverige* type, destroyers of the "city" class, minesweepers of the *Arholma* class, and the conversion of two destroyers of the *Ehrensköld* class into fast minesweepers. A strengthened aviation for naval support was also proposed.

(Volk och Försvar, Sweden)

#### **Swedish Lifeboat:**

This epoch-making lifeboat has been constructed by a Swedish engineer. The boat is self-erecting and self-emptying. It contains a series of watertight bulkheads and two coupled superstructures which can be closed



and made watertight. It is supplied with an automatic self-operating wireless plant, which is specially designed so that it broadcasts signals even if the crew on board are without any knowledge whatever with regard to radio and unable to work the apparatus.

(*The Sphere*, Great Britain)

### AUSTRALIA

#### **Scientists to Advise on Defense:**

Australia's future defense is to be shaped by a scientific committee to be formed soon. The committee's immediate job would be to



make a survey and appreciation of scientific weapons and, later, to forecast the shape of weapons to come. It would study closely atomic bombs, atomic energy and other scientific developments for their possible destructiveness in a future war. Australia would keep abreast of all such developments. The personnel of the scientific committee had not yet been chosen but it would not be long delayed.

The acting Commander in Chief of the Australian Military Forces is to revert to his position as Chief of the General Staff. Control of the Army then is to be taken over by the recently-constituted Military Board. The Board would make recommendations to the Government on defense matters, which would be considered in conjunction with the reports from the scientific committee.

*(The Australian News Summary)*

## GREAT BRITAIN

### The "Bat" Bomb:

A closely-guarded secret of the war was disclosed by the American Navy on 12 December when it was revealed that the Navy had perfected a radar-guided "bat" bomb, resembling a baby plane. It has been credited with destroying many tons of Japanese naval and mercantile vessels during the last year of the war. The "bat" is about twelve feet long, with a ten-foot wing span; it carries a



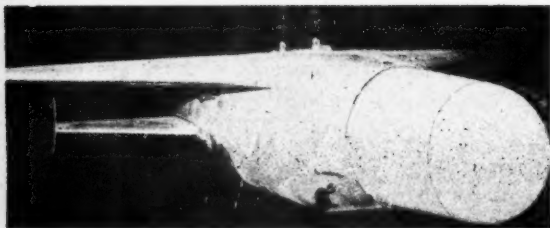
Bat Bomb under the wing of a Privateer.

heavy charge of high explosives. They are launched from Privateer patrol-bombers and are guided to their objective by radar echoes; they will follow their target despite evasive maneuvers. The small size of the "bat" and its amazing speed make it almost immune from enemy fire. The name suggests the principle on which the weapon operates: live "bats" give out sound-pulses and guide themselves by the echo. The "bat's" radar pilot was more efficient than its Jap Kamikaze counterpart in the "baka" bomb. The radar could "see" under any conditions, was quicker to react, and never got "cold feet." Navy Privateer patrol-bombers, with a "bat" slung under each wing, could stay out of anti-aircraft range to launch the missiles.

*(The Sphere, Great Britain)*

### The "Manx":

The most recent aircraft of unconventional design to be produced in Great Britain is the tailless "Manx." Built for special flight research tests, it has "curved" wings whose span is more than twice the length of the stubby fuselage. The "Manx," a two-seater which in flight has the appearance of a



The "Bat" Bomb.

bird, is powered by two 140-horsepower de Havilland Gipsy Major engines driving pusher propellers at the rear of its wings.



(The Illustrated London News)

### Naval Construction at End of War:

When hostilities ceased last year, ships under construction or contracted to be built for the Royal Navy included the battleship *Vanguard*, now almost ready for trial; three large fleet aircraft carriers said to be comparable with the American "Midway" type, the *Gibraltar*, *Malta* and *New Zealand*; four carriers of over 30,000 tons, the *Africa*, *Ark Royal*, *Audacious* and *Eagle*; eight carriers of over 18,000 tons, known as the "Hermes" class; and several units of the "Colossus" class of light fleet carriers, all of them except the *Hercules* already launched. Destroyers in hand comprised at least twenty destroyers of the "Weapon" class; over thirty of the "Battle" class; several of the "C" class; a full flotilla of the "D" class, and at least as many of the "G" class. Submarines on order included about forty of the "A" class, and perhaps as many more belonging to "S," "T," and "U" groups. Three sloops, several frigates and a few fleet minesweepers were also on order.

(The Navy, Great Britain)

### Operation Deadlight:

One hundred German U-boats have been sunk at a spot about 100 miles east of Bloody Foreland off the northwest coast of Ireland, the scene of the sinking of fifty Allied merchantmen in the dark days of 1942. This spot had been chosen for its great depth of 1,000 fathoms in order to avoid the contamination of fishing by oil seepage. "Operation Deadlight," as it is called, was carried out by naval vessels of the Allied nations, with the aid of German crews who themselves manned the vessels during hostilities. The operation began from Loch Ryan, where most of the U-boats were spending their last days. The German crews helped to fix the U-boats to the towhawsers of the destroyers, and they



were then towed out to the twenty square mile scuttling ground. The weather was so

bad that the first batch—all practically brand-new examples of the Mark 23 type of 250 tons—could not be destroyed by the explosive charges placed in the hull, and had to be blown up by gunfire from the destroyers.

(*The Sphere*, Great Britain)

## GERMANY

### ME 262 A-1 Jet Fighter:

The first ME 262A-1, a jet-propelled German fighter, captured intact by the AAF is being studied by aircraft technicians of Headquarters, United States Air Technical Service Command, to determine whether any of its features can be adopted to improve new Allied jet planes.

The main difference between the German

fighters have the power plant in the fuselage. The German jet engine is a Jumo 004, of a type similar to several other German engines being studied in ATSC laboratories.

Another difference is that the German plane has slots in the leading edges of both wings to increase rate of climb and to reduce landing speed.

The ME 262A-1 has a wing span of 41 feet and an overall length of 35.5 feet. Its speed at level flight is estimated at from 515 to 530 miles per hour and in a dive from 625 to 650 miles per hour.

Its range is estimated at ninety minutes at 20,000 feet altitude and forty-five minutes or less at altitudes lower than 10,000 feet. Apparently, it is capable of making several passes at a plane it is attacking, before it must land to refuel.

(*Aviation Review*, Canada)

GERMAN JET



jet plane's power plant and the General Electric jet engine is that the former utilizes an axial flow compressor whereas the G-E engine has a centrifugal compressor. The German plane is powered by two jet engines, one mounted in each wing, while Allied jet

### German Kamikaze Planes:

Use of the fateful Kamikaze planes was not exclusively a Japanese prerogative during World War II, but would also have become a German weapon had the Allies not gained victory in Europe when they did.

German development of a Kamikaze plane was completed and ready for use when the Allies stormed the streets of Berlin. It was never used, however, because of the inability of its promoters to sell the idea to the high command.

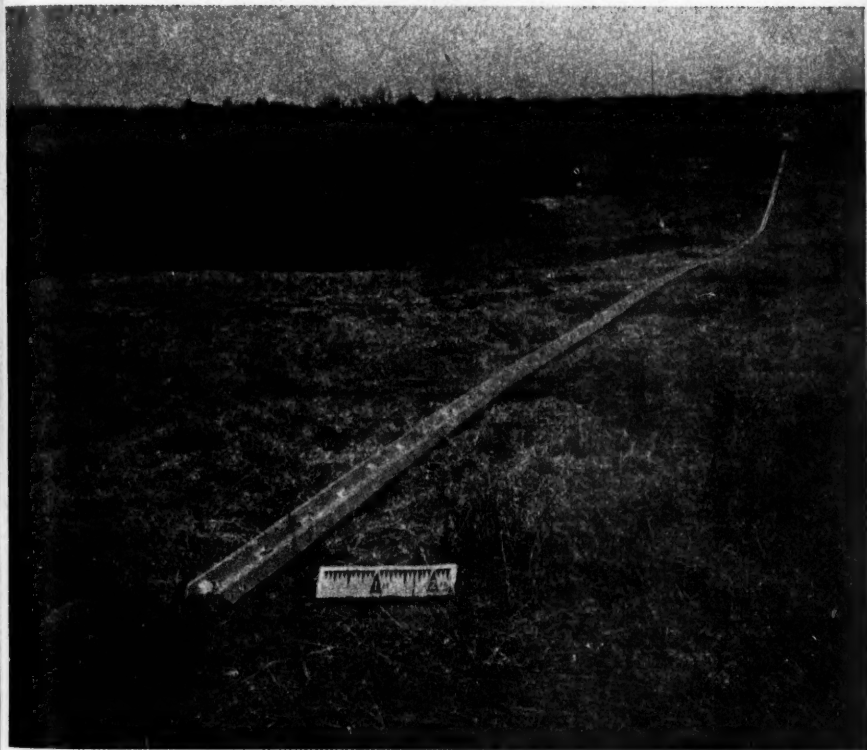
The German style differed considerably from that utilized by the Japanese, and although it never progressed as far as actual operational use, it did

represent considerable effort and planning.

It is revealed that tests were made on a man-controlled V-1 but these were not considered successful enough for practical use.

(*Army and Navy Journal*)

## UNITED STATES

**The "Snake":**

Details have been revealed by the War Department concerning one type of the rumored Army "snakes" that were used in the European theater to cut wires and detonate enemy mines ahead of advancing Allied forces. The snake cleared a trail wide enough for a line of tanks to move forward without danger of enemy land-mines.

This type of mine destroyer is a long metal trough, loaded with two parallel linear explosive charges encased between corrugated aluminum plates, bolted together to form a rigid assembly which can be towed or pushed by a light or medium tank. It is 400 feet long, 14 inches wide, 5 inches high, and weighs

about 9,000 pounds, approximately half of which is its load of high explosives.

The snake has a pear-shaped nose that guides it along and assures its passage over rough land. The nose is flexible enough to guide the snake over rocks.

Special elliptical explosive cartridges, used with the snake, were placed in the trough at intervals of about two and a half feet. They were exploded by an impact fuze which was detonated by machine-gun fire from the propelling tank.

These snakes were used mostly at night in order that they would not be destroyed by the enemy. They were assembled in the field, carefully camouflaged with grass and pro-

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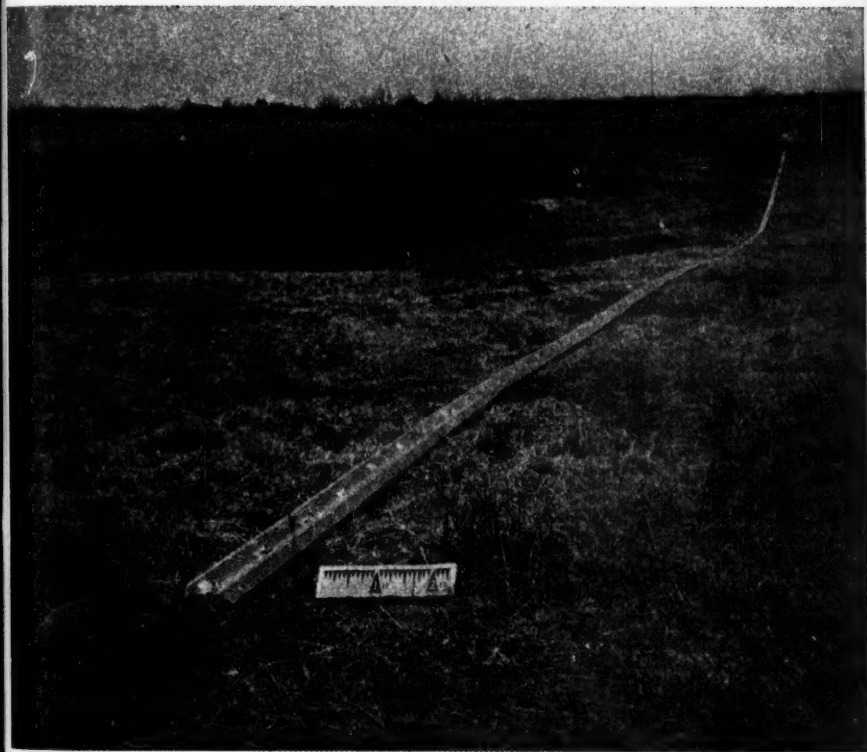
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These snakes were used mostly at night in order that they would not be destroyed by the enemy. They were assembled in the field, carefully camouflaged with grass and pro-

tected with sandbags, and pushed forward in the hours of darkness when the pushing tanks would be difficult to see. The snakes

moved forward at a rate of about two miles an hour.

*(Science News Letter)*



"Snake" in position to clear a path.

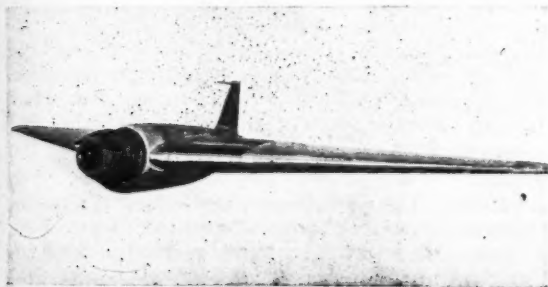


Results of explosion.

### **Army Buzz Bomb:**

Development of a jet-propelled buzz bomb which could be used aboard landing craft has been announced.

Designated the JB-10, it succeeds a twin-jet machine which Northrop first built for the army, patterned after its flying wing.



Improvements to the launching platform cut the length of the tracks to fifty feet, capable of installation on an LST. The backbone of each launching sled is a fourteen-foot aluminum tube, with the bomb resting on cradles within the tube. It is catapulted

into the air at 220 miles an hour with the aid of four rockets. The craft's weight is 7,000 pounds, including explosive charges of 3,700 pounds.

In contrast to the earlier twin-jet craft, which carried its bombs on either side of the engine, the JB-10's explosives are in magnesium cast housings within the wing on either side of the fuselage.

*(From a news report)*

# FOREIGN MILITARY DIGESTS

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## Major Difficulties Experienced in the Establishment of General Hospitals in Normandy

Digested at the Command and General Staff School from an article by Colonel P. R. Mitchell, Royal Army Medical Corps, in the "Journal of the Royal Army Medical Corps" (Great Britain) November 1945.

ONE of the most important factors on which success or failure of a seaborne operation depends is the rapidity with which the base is established following the entry of the "assault" and "follow-up" troops. This applies to the medical area in the base, as much as it does to those established by other services, for until such time as sufficient hospital beds are available to permit a "holding" policy to be introduced, General Hospitals must continue to operate on a "C. C. S. (Casualty Clearing Station) basis" with the resultant fatigue to surgeons and nursing officers, strain on the administrative staff—especially the Evacuation Staff—and, above all, to the detriment of the wounded.

In the early stages of the campaign in northwest Europe certain difficulties arose which materially delayed the opening of General Hospitals forming the main component of the medical base area. They occurred both in the pre-invasion phase and after arrival in Normandy. The fact that they were surmounted reflects the greatest credit on each individual hospital, and they have been recorded in the hope that the suggestions made as to how they might have been avoided may be of some use in future planning.

It would appear on the surface that the speed with which a large number of General Hospitals could be established in any Base Area is entirely dependent on the "phasing in" dates of individual units. This is the case, however, if the following factors are taken into consideration:

- (1) The state of readiness of the unit;
- (2) strict adherence to the Second Key Plan;
- (3) the necessity for close cooperation between the RE (Royal Engineers) and RAMC (Royal Army Medical Corps) services;
- (4) adequate provision of Pioneers;
- (5) adequate arrangements for the reception of personnel

and equipment of General Hospitals on the "far shore."

### State of Readiness

In assessing the state of readiness of any unit, attention is mainly focused on its training, its personnel and its equipment. All are of equal importance. If one is deficient, 100 per cent efficiency will never be attained. It is essential that the unit be given the opportunity of becoming a team and its labors in this direction must not be hampered by constant changes in personnel, by lack of training facilities including training stores, or by outside commitments. While these factors were fully appreciated, the planning staff were driven, by general scarcity of both medical and nursing officers in the Corps, into using General Hospitals as a pool from which reinforcements could be drawn, which the inevitable and unfortunate repercussion on these units as a whole.

In the pre-invasion stage it was found necessary to "milk" the vast majority of General Hospitals of their personnel. They were required for surgical teams, used to "bolster up" early phased-in medical units, for medical crews to man the LST's required for evacuation of casualties, for reinforcements and for duties in the United Kingdom.

Again, certain General Hospitals found themselves attempting to mobilize while running large static installations in the United Kingdom. The personnel were so busy professionally that they had little or no time to learn the equally important military side of the work they would have to undertake "on the other side." On the other hand, some hospitals found themselves unemployed and "buried" in the heart of the country for several months. In these units it was noticeable that the initial bloom of enthusiasm and expectancy gradually faded. Such training as was possible with the limited avail-

able resources became tedious, cohesion was lost owing to continuous changes in personnel, and the hunger for professional work overwhelming. In fact visits by senior administrative officers were awaited with an eagerness unusual in such units, as it was felt they might bring some exciting news of the future with the resultant release from boredom.

There were many factors which led to this unfortunate situation, not the least of which was the accommodation problem. It has to be remembered that in the pre-invasion phase the enormous force, both British and American who were to be employed in the assault and build-up, had to be housed in the United States. Suitable accommodation for units such as General Hospitals was at a premium. If the circumstances had permitted, the ideal would have been to arrange for the early phased-in units to mobilize and train alongside the later phased-in units, latter being those temporarily running static installations. With adequate stores and space for training, a period of six weeks would have been ample to mold the recently mobilized General Hospitals, and if, for security or other reasons, it was essential to extend the period of waiting, professional work would have been readily available.

Mention must also be made of the scarcity of administrative officers with a detailed knowledge of the organization and training of a General Hospital. This is a matter of the utmost importance and it is considered that a large dividend would be paid if carefully selected ex-Commanding Officers of General Hospitals, fully briefed, were each placed in a group of six hospitals in the pre-invasion phase. Uniformity in training, administration, and layout would then be possible.

While it was found impossible to "freeze" the specialists, duty medical officers and nursing officers, it was fortunate that the administrative "triumvirate"—the Commanding Officer, the registrar and the principal matron—remained in the majority of cases unchanged.

### Adherence to Second Key Plan

Except in the most exceptional circumstances, it is unlikely that the sites selected in the First Key Plan for the establishment of the various installations in the Base—taken from a maze of information, maps and air photographs, made available to the planning staff—must be considerably modified. It is essential, however, that the Second Key Plan made "on the ground" must be adhered to as far as is humanly possible. This requires the closest liaison with all concerned. In the Normandy beachhead it was decided after arrival to have two hospital areas some three miles apart. This decision was very largely made by the Chief Engineer and was governed by the lack of an adequate water supply. Under the existing conditions it was found that the speed of the opening of a General Hospital was very closely related to the speed with which water points could be established on the various hospital sites.

### Cooperation Between RE and RAMC Staffs

The general principles of the layout of a General Hospital, 600 and 1,200 beds, are clearly laid down in the Manual of Military Engineering. It is essential that the earliest information be given to the Commander, Royal Engineer concerned, of the policy regarding the phase to which individual hospitals are to be constructed, for unless this information can be given in the very early planning stage, it is probable that certain RE stores required to complete the various phases will not be forthcoming when required, as they are unlikely to have been included in the shipping program. This is not always easy to estimate, as it is inevitably linked up with the general staff estimate of the situation some weeks after the landing has been effected.

Properly constructed cook-houses and ablutions make an enormous, indeed essential, difference to any tented camp, but they are of the greatest benefit to a General Hospital and should have a high priority in the phasing-in of RE stores. They should not be considered as "frills," for in the early



stages, when the turnover of patients in hospital is high, and crash expansion to fifty per cent of its normal holding capacity a distinct possibility, the adequate cooking of food under reasonable conditions and as speedily as possible is highly desirable. It should be remembered that it is not always possible to call forward these stores. The emergency demands on shipping are normally devoted to the needs of the front line troops and it is for this reason that the above suggestion is made. In Normandy, while the lack of camp structures did not immediately delay the initial opening of the hospitals, it unquestionably delayed the smooth running of these installations to the detriment of the patients.

### Provision of Pioneer Labor

Through the generosity of the staff, Pioneer Sections were made available to all General Hospitals. As each hospital arrived four sections (100 men) were attached. Two sections were withdrawn after a week and a third after a further period of two weeks, leaving the unit with one section permanently attached. Nothing but the highest praise can be paid to the work carried out by these men and it is true to say that without them the General Hospital could not have carried on. It would have been of inestimable value, however, if the Pioneer Section had been attached to the early phased-in hospitals a month before their departure from the United Kingdom. They would then have had the opportunity of learning the nature of their duties both in the establishment of the hospital and later when it was fully functioning.

### Arrangements for the Reception of Personnel and Equipment

As has been stated, it was decided in the planning stage that personnel and equipment of General Hospitals would be shipped independently. In the very early stages of a campaign of this nature, it is possible, in fact essential, to arrange that both arrive simultaneously. As time goes on, however, various factors may cause a delay in the arrival of one or the other. Bad weather

may make it impossible to unload ships' stores, while it may still be possible to discharge personnel craft. Again, a sudden change in the day's priority of unloading—ammunition, for example, might be urgently required—may result in the ship carrying hospital equipment having to lie off shore for a longer period than was originally intended. This and many other factors only too well known to the "Q" [Quartermaster] Movement Staff can, over a period, cause serious delay in the "marrying up" of personnel and equipment shipped independently.

It might appear to the casual observer that the Movement Staff should be able to delay the arrival of personnel once it has become obvious that there would be a delay in the arrival of equipment. The reason why this is not possible is immediately obvious to those who have passed through what has been termed the "Sausage Machine." Into this machine—with its inlet in the United Kingdom—were crammed the thousands of units to be employed in the invasion. Slowly but surely the machine revolved, passing the units through the concentration areas, the marshaling areas on to landing craft, across the Channel, and finally turned them out on the far shore in their planned order. Once the machine has started nothing must stop it, otherwise chaos would reign. Communication with the contents of the machine—particularly individual units—is difficult.

Alternatively, it might be suggested that in the planning stage the equipment should be phased into the shipping program in a way that would insure its arrival in advance of the personnel. This is most undesirable, unless it is accompanied by a small advance party, for the following reason. Clearance of stores from the docks must be rapid if the build-up program of maintenance stocks is to be maintained. This means that maximum use must be made of all available transport and labor. If the equipment of a 1,200 bed hospital is unloaded at the docks prior to the arrival of the personnel, unaccompanied by even a small advance party, it is obvious that it has to be stored in either an Ordnance Depot or under arrangements

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made by the ADMS (Assistant Director of Medical Service) concerned. This is uneconomical as it involves a double "lift" and, therefore, more labor and more transport are required before the equipment can be delivered to its final destination. As the latter is merely sixty acres of open space, it is apparent that some personnel must be on the spot if this equipment is to be safeguarded. Unguarded equipment has a peculiar habit of disappearing.

The implications caused by the delay in the arrival of equipment are many, and in Normandy they seriously interfered with the establishment of the later phased-in hospitals as well as interfering with those already established. The reception and transit camps on the far shore were intended to retain personnel for a maximum period of twenty-four hours. They had no accommodation for female personnel. As a result arrangements had to be made to accommodate the personnel in the hospital area, and so acute did this accommodation problem become that a complete 1,200 bed General Hospital was converted into a hotel for the personnel of General Hospitals awaiting the arrival of

their equipment. The seriousness of such a situation cannot be over-emphasized for it can, and did, occur at a time when all were striving to get as many beds as possible established in the theater in order that a holding policy could be introduced. Unfortunately this situation was not fully visualized, and it was some time before it was possible to arrange for the nursing officers to travel independently on a hospital carrier. To circumvent this very real difficulty the following suggestions are put forward:

Where it is not possible for the personnel and the equipment to be shipped together, an advance party should accompany the stores which should be phased-in prior to the personnel. This advance party would accompany the equipment sent direct to the site allotted to the medical area in the Base. Where such a procedure is impracticable and ships' stores, for example coasters, cannot accommodate the personnel of an advance party, sufficient canvas and cooking equipment, taken from the general equipment of the unit, should accompany the personnel in order that they can be self-supporting on arrival.

## Aircraft versus Ships at Sea

Translated and digested at the Command and General Staff School from a Russian article by Lieutenant Colonel F. Makukhin in "Kraanyi Flot" (Red Fleet) 1 August 1945.

A series of air operations against German shipping in the Northern Theater of Operations, and especially in the Baltic Sea, have shown that, when mutual support is properly organized and when the shortcomings of one plane are compensated by the strong points of another, decisive results can be reached in the shortest time. In the course of this war, massed air strikes coordinated as to place, time, and objective have become the principal method of attacking enemy ships at sea.

Before a warship is attacked, it is important to ascertain the personnel and matériel needed for the operation. Combat experience has shown, for instance, that, in

order to sink a cruiser, it is necessary to score direct hits either with three 500-kilogram, armor-piercing bombs, or with two 1,000-kilogram demolition bombs, or with three torpedoes. Torpedo planes, dive bombers, and low altitude bombers are therefore used for such missions. In making up the attacking force, the problem is to determine the share that each will have in the destruction of the target, and from this to establish proportionately the strength of each group.

Obviously, the functions and the tasks of the various classes of aircraft participating in a strike are not the same. Yet, the torpedo planes and the bombers invariably constitute the main body of the striking force. This

fact has been confirmed in all major operations in World War II, particularly in the Pacific Ocean. These planes play the principal role in attacking heavy armored warships, while operations against small and light-armored ships call for low-altitude bombers, dive bombers, and attack planes (Stormoviks). In the interest of the group that carries the brunt of the attack the use of all types of aviation becomes one of the basic principles of mutual support.

Success in the combined attack is attained through concentration of effort of all groups with respect to time and place. Coordination of operations with respect to place demands precise distribution of the main directions of attack, of altitudes, and of targets among the attacking groups. The most important requirement here is the freedom of maneuverability. Consequently, when planning an operation, the staff must attempt to distribute the directions or approaches in such a manner as to allow the most effective utilization of the capabilities of all planes and of their armament.

For a successful combined attack, it is expedient to echelon the groups vertically. Generally, the highest altitude should be allotted to the heavy bombers, and only in the final stages of combat, when the anti-aircraft defenses of the ships in the entire convoy are neutralized, can the succeeding echelons attack from medium and low altitudes. The allocation of altitude for the dive bombers must receive prime consideration. This is explained by the fact that the altitude necessary for a recovery from a dive must be such as to eliminate the dangers involved in leveling off.

The attack planes (Stormoviks) attack from altitudes of 100 to 1,500 meters; in the Baltic operations in the spring of 1945, however, they attacked from low and hedge-hopping altitudes. The fighter planes for air cover fly at the altitudes of the groups which they escort, while air clearing groups and mop-up groups usually operate 1,500 to 2,000 meters above the low-level bombers.

Another very important element that de-

termines the precision of cooperation in a combined air attack is distribution of targets. The experience of the final large-scale naval engagements in the Pacific Theater demonstrates the necessity of destroying the aircraft carriers first. Accordingly, when attacking a large convoy and when the main attack is delivered from medium altitude, the first ships to be put out of action are those equipped with anti-aircraft weapons. This further assures freedom of attack against the main targets—the transports.

When delivering a blow against a naval combat unit, the operations of all groups must display coordination and cooperation of the highest degree. Here, it is imperative to maintain rigidly the principle of successive destruction of each target in the established order of attack. But if adequate forces are available, all large hostile ships should be attacked simultaneously. This upsets the coordinated action of the enemy's anti-aircraft defenses, restricts his maneuverability, and prevents him from evading the blows.

Coordination with respect to place (the area of attack, the direction of approach, and the operational altitude), cannot be effective if it is not planned with sufficient precision with respect to time. A disruption in the successive and continuous pressure on hostile defenses usually leads to unnecessary losses, gives the enemy an opportunity to radio for additional covering forces, and allows him to maneuver his defensive means and to repulse one by one a series of isolated—and for this reason, weak attacks.

When organizing an operation, the staff must first establish the duration of the attack, its sequence, and the intervals between groups. The principles underlying the organization are as follows: the use of a large number of aircraft for a short duration; minimum exposure to the enemy's defensive action; and the neutralization of hostile anti-aircraft defenses for the duration of the attack. The overall duration of the attack—even of very large air groups—as shown by combat experience, should not exceed ten minutes. During this period, the strike is

well organized, the enemy's convoy can be subjected to the blows of approximately 120 flights of dive bombers and sixty tactical groups of torpedo planes.

Depending on the composition of the convoy and on the situation, the attack may be made by a constant stream of groups of one type of aircraft followed by another or by parallel blows delivered from high, medium, and low altitudes simultaneously. The procedure most often employed in attacking an individual target, such as a large warship, is the continuous and successive stream. When attacking a convoy, a more convenient method is that of parallel blows.

The sequence of different air groups in flight is not constant. It depends on the situation, the enemy forces, the composition of the combined group, and the distance of the objective from the air bases.

An example of excellent coordination was shown by a group of the Baltic Air Force in an engagement on 14 March 1945. An enemy convoy was observed by our reconnaissance between Libau and Danzig. Groups of torpedo planes, low-altitude bombers, and dive bombers flew out to destroy it. Shock groups of attack planes and fighters covered the operations.

The first wave consisted of dive bombers and attack planes (Stormoviks). The attack planes delivered a blow on the escort vessels

and transports, which put up heavy anti-aircraft fire. The dive bombers attacked the 4,000 and 8,000-ton transports. The dive bombers were followed by the low-altitude bombers and finally by the torpedo planes.

Perfect coordination, the thorough organization of the attack, and the correct utilization of the strongpoints of every type of aircraft—all contributed to the success of the attack. The convoy was utterly destroyed. Almost all the large ships were either sunk or damaged.

When using parallel blows, the operations of combined groups are carried out differently. The first planes to attack the target are the fighters. Then the ships are attacked by groups, consisting of dive bombers and attack planes, the mission of which is to neutralize the antiaircraft defenses. Then follow groups of torpedo planes, low-altitude bombers, and dive bombers descending on the targets from various levels and from different directions simultaneously.

The length of intervals between successive attacks is generally determined by the principle of minimum exposure to the hostile defenses. This time interval, however, must allow freedom of maneuver for the withdrawing group and must prevent the planes of the approaching groups from being destroyed by the explosions of bombs dropped by the preceding group.

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Sometimes, though not always, people are wise after the event, but it is also possible to be wise before the event and yet not have the power to stop it happening. In war misfortunes may come from faults or errors in the High Command. They may also come from the enemy being far too strong, or fighting far too well. It is easy when the tide is adverse to contend that alterations in the structure of the war direction would have made or will make amends for the vast and gaping lack of men and resources or power of transportation. It is easy, but it may not be true.

*Winston Churchill quoted from "Life"*

## The Role of the General Staff School in Brazil

Translated and digested at the Command and General Staff School from an article in Portuguese by Colonel Renato B. Nunes in "A Defesa Nacional" (Brazil) October-November 1945.

WE were, up to about three decades ago, practically ignorant of the problems and realities of the art of war. Not that we were lacking in intelligence or a desire to study—on the contrary, we read a great deal; but in an unsystematic manner and without a knowledge of fundamental tactics, which is indispensable for a good understanding of the subject and to adapt the ideas thus gained to our own realities.

A few reminiscences, if the facts were not apparent in the minds of all of us, would confirm my assertion; a discussion which developed after a class period in the *Escola de Aperfeiçoamento de Oficiais* (Officers' Refresher School) among fellow officers who were by no means among the least informed, with regard to whether automatic weapon fire should cover the front or the rear of barbed wire obstacles; the enthusiasm and eagerness with which we all hurried to the book stores when there appeared at the School the first copy of the *Manuel du Gradé d'Infanterie* (NCO's Infantry Manual). Reading is profitable only when the subject matter is systematically and properly selected.

To create is the hardest; to perfect is a lighter task. In the transitional phase, it may be said without exaggeration that every one of our tactical schools was one grade below its proper place in the instructional level. The courses of the School of Arms were loaded down with many subjects which should have been studied before, and as a result, some of the links were left out of the chain of professional instruction.

The complex and highly varied problems relative to the preparation for war, in all its military, political and economic aspects, are so interrelated that a long and uninterrupted series of tasks must be accomplished in all the fields of national activity. The higher officers and special army organizations are in charge of all work of military character but

must, likewise, orientate the solution of other problems which are carefully defined by them, but outside their reach due to their national scope.

The period immediately following a war constitutes, as a rule, a period of peril for the efficiency of the victorious armies, especially when there exists the insistent, utopian belief that war with its indescribable horrors will never again occur. There are two kinds of ideas which help to create this danger: the tendency to be satisfied with the instruments of war with which victory was won, and the tendency to wait till new weapons are conceived and constructed before a better army is organized. The latter is peculiar to those countries which have not organized their military forces with the maximum possible efficiency according to the resources they have at their disposal.

It is true that both conceptions possess points that justify their existence, but not when adopted separately, excluding one or the other. As is always the case, *in medio stat virtus* or, in other words, virtue resides in the judicious combination of the two tendencies.

This means that the organization and training of an army must not follow rigidly the lessons of the last war, nor be postponed indefinitely till plans can be elaborated which, however perfect they may be, will be difficult to conceive and uncertain as to the future. These plans will not be executed, therefore, with the necessary energy, continuity, uniformity, propriety, or complete objectivity.

The logical, imperative and indispensable thing is never to neglect to increase the efficiency of the army, as if it had to go into action tomorrow, with the means at our disposal today. It is just this trival and self-evident truth that is in danger of being forgotten or disregarded just at the vital moment. The side that is vanquished does not forget, but rather profits from the lessons



taught by experience and paid for at the cost of blood and not infrequently with the loss of its independence.

To maintain the existing state of efficiency of an army which has just fought a successful war is an objective which is possible to attain. It is not sufficient to foresee all the circumstances of a future which is more or less remote and indefinite. We should try to protect ourselves against the eventuality of a war that is suddenly thrust upon us or which threatens to break out within a short space of time. With an efficient organization it is possible to offer resistance to the first attacks and gain time and space for the afflux of new resources but only on condition, let us repeat, that the organization has not suffered deterioration during the period of peace.

There will not always be other friendly belligerents to help in gaining the time and space necessary for correcting our lack of foresight and preparation, as is the case when identity of interests or common danger facilitates understanding and tacit or forced alliances. It is, therefore, indispensable to the security of a country that its army be always equipped and trained as if war were imminent. This preparation and training must be based at least on the means and forms of action advantageously employed in the last war.

Observation, and experience gained in past wars, can orientate the perfection of existing means (matériel and training), while the creation of other instruments of war is a function of time, the financial resources, and economic and industrial powers of a country. The question of matériel is not, however, of great importance if the permanent army is provided with at least the means of action considered adequate at the present time to guarantee its efficiency.

For the man who is doing the fighting, the problem is very simple and will always be the same—to kill without being killed. In the matter of surpassing the enemy in will and action, it makes little difference to the soldier whether his unit is incorporated into

a single brigade or into a division. This does not mean, however, that this question is of minor importance. It is a matter of great consequence, but it is a problem of another nature. It is of concern to the leaders who have to combine, and operate the pieces on the chessboard of war. Organization is, in common with all things human, susceptible of improvement, but the thing to do is to make use of the knowledge one already has and put it into practice with the equipment and means that are actually available, while the more advanced problems of command organization are being studied.

This problem is not solved by merely imitating, for in war there are no universal and invariable patterns or rules, nothing that is independent of the physical medium in which the action occurs. Flexibility in formations, variety in combination of forces, ease of command are things which must be required *a priori*, by a command organization; confidence in one's self, and in one's own possibilities of action are the most powerful moral factors.

The combat training, which is now conducted in a more effective manner since it also includes the various commands, is able to reveal with finality the good or bad points in the organization. In order that the results of this experience may be conclusive, it is imperative that the execution, that is, the instruction and training of the men and subordinates be as perfect as possible. We fall back, therefore, on the *leitmotif*: effective, continuous, objective instruction and training extended to all echelons of command, cadres and soldiers, is the basic condition on which every decision must be based when it is desired to increase the efficiency of the army.

Scarcity of means does not justify a mere pretense at training, much less, lack of effort. On the contrary, it is scarcity and not superabundance of means that requires better training of the officer; he must have greater mental flexibility and more fertility of imagination if he desires to obtain better results and certainty of success for the forces under his command.

It is not the people who provoke wars, for they are well aware of the cost. Nor is it individual interests. The causes of war, the real and hidden ones and not those which serve as an ostensible excuse, have always been economic interests—the conquest of markets, of raw materials, freedom of ocean routes. It is those in control who call for them when they are not afraid to lay hands on this last line of reasoning in handling the high problems of collective interests of nations. Those in control change periodically, and good understanding between those in authority alone does not constitute a sure guarantee of peace. Until two or three generations are educated against the horrors of war, this scourge will always hang threateningly over the head of humanity, and war can only be avoided by means of another and more powerful material force—that is to say, being ready for it.

Let us examine, now, the other danger that may develop in the postwar period. Nothing produces a greater effect on our minds that the sight of victorious forces and the things they bring back with them, things never before seen, things that are new to us. We find in this the most frequent risk, either because of our failure to give due consideration to the observations and experiences of the past or because of our failure to recognize in them the things that are essential and enduring. Hence the false ideas, unfortunately much more widely diffused than it appears to be, that "methods of waging war have changed completely."

Rare are the minds that are able to analyze and discern the essential and fundamental causes of things. Not all remember or are convinced that tactics is not a set of rules and universal principles, applicable no matter when, where, or how. It is a set of truths and experiences comprising the intellectual arsenal to which one resorts under circumstances that are always different, yet inherent in the problem at hand, in search of the reasons which justify the selection, employment, and combination of the means at one's disposal, in order to decide on the "most suit-

able method of attaining the contemplated objective."

It is true that the incessant progress that has been made in the arts and sciences, the improvement of existing weapons, and the creation of others far more powerful, is responsible for new forms of action. The number and forms of combination of the forces of destruction have increased, but this does not invalidate the fundamental knowledge previously acquired. On the contrary, it enriches with new factors, the logical process of reasoning that must lead to the proper decision. There is nothing more false, however, than the idea that we have to learn all over again how to wage war.

Now we come to the principal motive behind these considerations. The General Staff School may be considered the principal institution and is, also, the only one that has maintained, up to the present time, its initial efficiency.

In this School are prepared the officers who are to exercise the function of supreme command, and those who are to serve with the General Staff—the first stage in the training of general officers. It constitutes a laboratory of previous intellectual experiences to test new conceptions relative to the organization of command and new means of action referred to it by the General Staff of the Army—in short, everything that should contribute to a doctrine of war whose practical and objective test would occur afterwards in field maneuvers with large units having adequate personnel and equipment.

It has often been criticized by routine-minded persons as "given to romantic methods," since in theoretical exercises it has made use of weapons and other means of action considered at that time entirely beyond our reach and, therefore, utopian. They forgot that the mind is as able to develop and strengthen itself by means of mental exercise as is the physical body by means of gymnastic exercises, and that it is common sense to prepare oneself at least mentally, for the contingencies of future wars.

It may still be criticized today, but in the opposite sense, all of which is the fruit of

hasty conclusions and excessive generalization: "War has undergone a transformation," they say, "and the instruction given in the School has, therefore, become obsolete and inadequate." It is the eternal tendency to confuse desires with realities and dogmatic principles with the reasoning faculty. What we lack, above all, is experience.

Our forces have just participated in World War II, and no one has the right to utter anything against the bravery and devotion shown by our officers and soldiers; but it must be recognized that their experience was neither complete nor conclusive. There is a great deal of difference between cooperating in a war and having on one's shoulders the entire responsibility for its outcome. This is especially true when one acts alone and only with the means at his disposal. It would be just as mistaken an idea to judge what we now have as sufficient for all time to come, as to think that in all future or possible wars we will always have to fight under an "umbrella" of airplanes and behind the steel wall of tanks and projectiles of every sort.

What is the essential and most general characteristic of the operations of World War II? It is the absolute, crushing, pulverizing superiority of material might, combined with speed. It is clear that, since man is the soul of the machine, moral force and enormous masses of men must also be taken into account in computing this might. But, can mass multiplied by velocity be substituted for the maneuvers of large units?

Let the brilliant maneuvers of the Russian generals—to cite merely the first reaction to the German avalanche—provide the answer to our question. The tactics employed by the German forces were very much like those of the bull who downs his adversary with his brutal impetus after catching him unprepared; it advanced to Dunkirk and the Caspian Sea, but well-aimed and painful darts were driven into his back and he returned to Berlin.

Have the tactical verities (to avoid the ambiguous term of principles) which constitute the logical basis of tactical reasoning lost the essential significance acquired

through centuries of observation and experience? Have they ceased to be fundamental factors in the search for the most fitting manner in which to act in the pursuance of an objective? On the other hand, in the field of psychology, has man ceased to have the same inspirations of weakness and heroism that he has always had through the ages? It does not seem so.

And what is it that is taught in the General Staff School? Recipes for winning a war? Hardly so. One is taught there, to be sure, how to reason in a methodical and logical manner and without omitting any of the essential factors which influence the correctness of the decisions necessary to confront each particular and well-defined tactical situation.

A check is then made whether or not the method is general and rational, and the effort is made to implant it in the subconscious mind by applying repeated and varied solutions to concrete cases. This method is independent of the epoch and the existing means of action, and must, of necessity, lead the officer to ascertain the "best way of acting, the way which offers the greatest possibility of success in imposing his will on the enemy." It is this that is called *the decision*; and the decision is the prerogative of the leader. The mission, that is, the thing one desires to do; the enemy and his possibilities of action; the terrain where we and the enemy are going to act; the disposition and employment of the means we have at our disposal—are the constant and essential factors to be considered. They have always existed, at all times and in all places.

Let new weapons be given the Army; let the existing ones be improved; let the forces be reorganized, but the teaching of the General Staff School will always be up to date, because these new factors which influence decisions, will enter automatically into the reasoning process. This constitutes the basis of its permanency.

In the General Staff School, tactics is no longer taught by means of lectures as it was in the beginning. Instruction is based on the solution of tactical problems, that

is, the objective and rational application of the norms, rules, precepts, or principles relative to the art of war, prescribed in Tactical Regulations and regarded as actual truths attested by experience and observation. This is not because of any specific value attributed to any of these principles, but rather because they were regarded as factors to

be taken into account, in arriving at the most fitting solution in each particular case. Participants change, means and methods change, but logic, never. And this has always constituted the basis of our reasoning. Let us continue, therefore, to practice with what we have, while improvements that will come later are being planned.

## How the Fourteenth Army was Reinforced

Digested at the Command and General Staff School from an article by Brigadier General J. H. Gradidge, O.B.E., in "The Journal of the United Service Institution of India" October 1945.

WITH the capture of Rangoon there came to an end one of the most interesting and revolutionary periods in reinforcements procedure and organization. Little is known by the average man of the immense work and organization required to keep up to full strength the units of an Army in the field; and, when it is considered that the Fourteenth Army had to be reinforced over high mountains, large rivers and jungle, the whole without any rail communications, the following description of how those difficulties were overcome will interest the reader.

The history of the reinforcing of the Fourteenth Army from the date of the Army's birth in November 1943, to the capture of Rangoon and the reopening of sea communications, fell naturally into two phases; the first phase, which was prior to the investment of Imphal, was entirely by road and rail, while the second phase, the advance from Imphal to Rangoon, was entirely by air.

*First phase:* In order to get the picture quite clear, it is necessary to go into certain details of past history, as these details were primarily responsible for the working of the intricate system which had to be evolved, in order to carry out Phase Two.

In March 1943, a Reinforcement Group was formed on the same lines as that which had been operating for some time in the Middle East. This Group was incorporated in the Headquarters of Eastern Army, then controlling the war in Burma, and its charter

was to control the training and administration of Reinforcement Camps then located as follows: Two at Gaya, one at Comilla, one at Gauhatti, and one just moving into Kohima (see sketch). Each of these camps was designed to hold and train 3,000 men, for which the staff provided was only one Lieutenant Colonel (CO), one Major (second in command), an Adjutant and Quartermaster. Each camp had, in addition, a Major and a Captain as instructors, with a small instructional staff, all supplied from India and having no experience of the requirements of forward units.

Camps were subdivided into ten sections each of 300 men; no provision was made for an officer to command these sections other than a note in the War Establishment, which laid down that they should be "provided from reinforcements passing through." But to rely on a changing, and not always available, quota of Reinforcement Officers to administer and train 300 men was an impossible proposition; and it can be stated, without fear of contradiction, that this lack of officers was largely responsible for the dissatisfaction justifiably felt at the state of reinforcements received by forward units.

It was early realized by Reinforcement Group that no improvement could be expected until semi-permanent section commanders were appointed, but not until August 1943 were these appointments incorporated in the War Establishment.

The second, and perhaps most far-reaching improvement inaugurated was the placing of each camp on a Divisional basis, which meant that camps were reorganized to hold the reinforcements of one Division only, with a proportion of Corps troops. It should be noted here that owing to the extended and difficult L. of C. (Communication Zone), it was imperative that the number of reinforcements held forward should be greatly in excess of the peacetime estimates, and the final figures rose to as high as three months wastage, i.e. eighteen per cent. Infantry, nine per cent, Engineers, and Services in proportion.

The Divisional basis completely changed the aspect and morale of the camps, as, without exception, Divisional Commanders and their staffs became personally interested in their camps, both in training and administration. Divisional flags were flown at Camp Headquarters, and Divisional Signs worn by camp staffs, with the result that men coming forward felt at once that they were already part of their Division. In addition, Section Commanders and Instructional Staff were all provided from the Division, with the result that men met, for the first time in their long progress to the front, instructors who could speak with authority on the latest actions of their units and teach lessons based on personal experience.

With the reorganization of camps it was considered that they should be located as far forward as possible in order to obtain the closest liaison with their Divisions. This also conformed to the Hospital layout. At the time of the Japanese advance, camps were situated as follows: three in the Imphal area, one at Kohima, two at Gauhatti, two at Comilla, one at Chittagong, also two at

Gaya remaining in a transit role to provide a very necessary cushion.

Of the above camps, Nos. 20, 21, and 25 took an active part in the manning and defense of Imphal while Camp 24 fought all through the epic battle of Kohima. When it is considered that these units were training



and holding units only, and were not organized or staffed for fighting and, in addition, contained for the most part young recruits who experienced their first baptism of fire under most difficult circumstances, it must be admitted that their work was beyond praise, particularly that of Camp 24, whose exploits have been, unfortunately, overshadowed by the more spectacular feats of other formed, and well-known regiments.

With the investment of Imphal and Kohima it was decided that it would be impossible to maintain so many months wastage



forward, and the four camps were moved back (three of them by air) to Comilla, as were the hospitals. This brought Phase Two into operation.

*Phase Two.*—With the closing of Imphal road, it became necessary to fly in all reinforcements, and from then onwards, to the capture of Rangoon, a daily air lift was maintained, the aircraft used being the ubiquitous Dakota, flown by both the RAF and the American Army Air Force. The efficiency of the air supply service to Fourteenth Army has been written up so often that there is little need to stress it here, except to state that, throughout the latter part of last monsoon and during all the difficult times which followed, not one single reinforcement was lost in air transit. That unique achievement could only be fully appreciated by the fighting formations.

The first experience of Reinforcement Group in the organization of an air lift took place during the time that the Imphal road was closed, and it immediately became apparent that a most stringent control was necessary to balance the claims of food, ammunition, stores, and men. This control was in the hands of IV Corps, who laid down priorities of units, and sometimes even of individuals, who were to be flown in. During the time the road was closed 10,500 reinforcements were flown into Imphal.

In April 1944 a conference was held to consider the establishment of a permanent organization responsible for the "fly-in" of all reinforcements to Fourteenth Army. The number of daily sorties was then estimated at ten. This proposal was not accepted, as it was considered that insufficient aircraft would become available for this purpose. Nevertheless, during the peak period of Fourteenth Army's advance, no less than forty-four sorties, carrying 1,100 reinforcements, were flown in, in one day.

The total number of reinforcements flown in totaled 63,500, the average daily lift for 1944 being 110, and for the first four and one-half months of 1945, 265. When it is considered that these men had to be delivered

to as many as five different airheads, collected from seven separate reinforcement camps, and made up into plane loads of twenty-five men, it will be realized that an absolutely foolproof organization had to be established.

One of the most difficult problems was to convince formations and units that priorities were rigidly controlled by Fourteenth Army, and that Reinforcement Group was only empowered to act on these priorities, which changed almost daily in accordance with operational necessity. This system did not always suit formations, but it must be obvious that with the vast number of demands on aircraft, as well as an ever-changing battle situation, one coordinating authority was essential.

The organization behind the "fly-in" was one which required intense study, and which had to be evolved from practical experience only, as no textbooks were available for reference, nor had any study of this problem been possible previously in this theater of operations.

An extra commitment which Reinforcement Group was faced with was the establishment of an Air Dispatching Center on Comilla Air Strip. This was necessitated by the late briefing of air crews and the early takeoff. Most planes flew two sorties in a day, which made it essential that reinforcements were moved to the strip the night before emplaning. A well-run and efficient dispatching center was therefore essential, but no provision for it had been made, nor were staffs available.

However, with the help and cooperation of the Reinforcement Camps, the center was established and accommodation provided for 600 men, with dining halls, officers' rest room, and a canteen for all ranks. That center was by no means perfect, and the only reason for mentioning it is to draw attention to the necessity for advance planning, and to stress that a successful "fly-in" is not only a question of providing aircraft, but of producing men at the right time and place, and in good heart.

## Training the Soldier

Digested at the Command and General Staff School from an article by Major General M. J. Costello in "A Call to Arms" (Eire)

IN view of the number of men affected, the training which the Army gives to its members is a matter of great national importance. Those with a paternal or other personal interest in a soldier are naturally concerned to know what the Army makes of him. But every citizen who takes his duties of citizenship seriously should be interested in this topic as a citizen, even if he is not concerned as a parent or guardian. He should be concerned to know the nature of the influence which Army training has on the national character, or at least upon those citizens who are given it.

It will readily be understood that soldiers are constantly learning new skills, and practicing to reach ever higher standards of proficiency. It is not so easy to grasp the complexity of Army training. The business of fighting a modern army is nowadays so complicated that a great deal of specialization is necessary.

Each branch has its specialist schools. In each branch of service there are so many grades, and corresponding standards of knowledge, skill and experience that there are several categories to be trained. Even within the specialist corps there are individual specialists or groups of specialists whose training has to be conducted on lines appropriate to their specialty. There are, for example, eighty-two separate trades or occupations in the Army whose members receive proficiency pay. All of these are trades which are followed in civil life, but there are over seventy other categories of soldier specialists whose skills are purely military.

This vast teaching establishment has to train almost all its teachers. These are its officers and NCO's, to most of whom teaching is an everyday task. They spend most of their time at school either as pupils or teachers, for the Army's teachers are constantly required to requalify by refresher

courses, advanced courses for those reaching higher grades, and special courses when new subjects, new weapons, or new methods are introduced.

The Army exists for defense. It can be justified only by reference to its fitness for this task. The ultimate test of its efficiency can take place only on the battlefield and the highest aim of its officers and NCO's is to fit themselves to lead with skill, judgment and courage the units which they have the honor to command, and to give their men the training that will lead to success in battle. But this training involves much more than purely military skill. Army physical training, which is obviously of the highest importance to the soldier, is no less valuable to a man in civil life and, by its effect upon men who pass through the Army, it is a factor of importance to the general standard of health in the State. Training in personal hygiene and sanitation is obviously valuable to the majority of those who pass through the Army. The habit of discipline is one which our past history prevented us from acquiring, and the same history shows how necessary it is and how on many occasions the nation suffered from the want of it. Successful military training will develop alertness and self-confidence, and in this way help the trainee to make the most of himself in any occupation.

Much of the training given in the Army has a practical value in civil life altogether independent of the moral and physical results. The administration of the Army is a vast business and calls for administrative skill which does not come from inspiration. It comes from formal courses of instruction as well as practical apprenticeship training. Apart from a few large and progressive industrial firms there is no comparable administrative training given in the country today.

It is not proposed in this article to assess the success of army training. The real and ultimate test of its success is the test of battle and our people have providentially been spared for this. Only when the story can be fully told of the rapid expansion of the Army in 1940 will it be possible to assess the quality of its instructors or the soundness of its training system. Judgment belongs properly to those not engaged in the work. But it may be permitted to one of the participants to offer a few remarks which may explain to those who come after us how a seemingly impossible rate of expansion was achieved.

The Army is, of course, no exception to general human failings and imperfections. No more than any other human institution does it realize fully the aim of its training. It gets results that correspond to the human material at work in it. But these results, even though they vary greatly according to the quality of the pupils no less than the quality of the teachers, are generally so good as to be astonishing to many. The rate of expansion found possible, and considering the circumstances, the comparatively few and small cases of loss, waste and other inefficiency are in themselves proof of the soundness of the pre-emergency training in our very small regular army. The situation is much as if a retail business with ten branches had to expand in a few months to one of one hundred branches—branches of the same size, but with a greater volume of business in each and in doing so had to depend on totally inexperienced persons for the additional staff required. Or it might be compared to the problem which would face one of our leading colleges if it were suddenly called upon to set up nine additional colleges and to depend at the same time on existing staff and pupils and untrained recruits for its increased staffs.

Consider further the difficulties of this expanding business, or this college, if it were required to purchase and account through a system of accountancy in which a primary aim must be the protection of the public

purse. And, finally, consider the fact that expansion took place at a time when some of the needed supplies were unobtainable, others in short supply, and most commodities obtainable only with difficulty and delay.

For reasons which it is yet too soon to discuss, the expansion of training facilities was even more remarkable than the expansion of the administrative machine. But even at this stage I feel bound to record that there were four factors which rendered this possible:

- (1) The national aptitude for teaching;
- (2) The national aptitude for soldiering;
- (3) The high quality in character and intelligence of the men who joined the Army gave us material to train which must be considered above the general level of the nation and much above that available in the ranks of many professional armies;
- (4) Our pre-emergency training aimed at training most commissioned and non-commissioned ranks, not merely for the job of the man immediately higher, but for the high posts which in peacetime seemed to be attainable only by a few.

In the Army schools we consider the training of the soldier under three heads, namely, moral, mental and physical. Moral training has for its object the development and strengthening of character, especially the inculcation of the military virtues of loyalty, patriotism and discipline, and the habits of order, regularity and thoroughness. It aims at developing the self-respect of the soldier and with it his self-confidence and determination to be a worthy defender of his country. It extols courage and fortitude in adversity, and it teaches the enduring of hardship without murmuring.

Physical training aims at a harmonious development of the body. It tries to develop strength, agility and balance and to exercise lungs and heart as well as muscles.

Mental training is concerned not merely with the acquisition by the soldier of the knowledge necessary and useful to him in war, but aims at developing his alertness,

powers of observation and reasoning. It encourages him to think for himself. It exercised his mind as physical training exercises his body. It proceeds on the well-founded belief that the intelligent and resourceful soldier is many times more useful than the unthinking or unintelligent one.

In actual practice, of course, there is no watertight division of these aspects of training. Physical training, properly conducted, has a moral effect—especially in promoting self-confidence and poise—which is second only in importance to its effect upon the body. Much of the technical military training of the soldier consists of drilling with various weapons and each drill requires the formation of a physical habit. The attainment of the necessary dexterity in the handling of arms and other equipment calls for mental as well as physical effort.

When the civilian joins the Army the first thing he has to be taught is how to look after himself in the absence of the mother or sister or other womankind upon whom he has been accustomed to depend for assistance. The extent of that assistance in personnel life is something which few realize until they are thrown on their own resources.

The alertness of the soldier, and his ability to concentrate or pay attention to what he is doing or what he is being taught, is developed right from the beginning. In this matter the recruits vary a great deal, depending upon the amount and nature of their earlier education and civil employment rather than on their brain power.

The soldier is given an explanation of the true nature and purpose of discipline. He learns that it amounts to a willing subordination of self and selfish interests to the common good, that it means the cheerful and willing performance of duty and respect for authority as such. The precise rules of conduct that govern his life as a soldier are explained gradually, not only so that he may know what to do and what not to do, but so that he may appreciate the practical purpose and necessity for every disciplinary rule. Disciplinary training is

continuous throughout the soldier's career but it is particularly important in the earliest days, for discipline is a habit of mind and it is essential to secure from the first development of good rather than bad habits. In addition to teaching and developing habits of discipline and attention, drill has the physical effect of making the soldier quick and precise in his movements and in the operation of his weapons.

Morale is a much abused and somewhat overworked word. It may be defined as the state of mind of a group; it includes self-confidence on the part of its members, but principally and more important, it implies mutual confidence and trust in the group as a whole. It includes in its military significance a whole-hearted acceptance by the members of a unit of the ultimate purposes of that unit and a firm determination to achieve them. It includes and is inseparable from a spirit of good comradeship and a determination not to let down "the side." From the first stages of training to the end of his military career the morale of the soldier is fostered by suggestion, exhortation and emotional appeal. His pride in his own appearance and worth-while achievements are but part of that pride in his unit and his comrades which is the basis of mutual confidence and comradeship. Since the purpose of a military unit is the defense of the State, the basis of morale is a common patriotism which is cultivated in every possible way.

The officers and NCO's are required to take a personal interest in the private life of the soldier, to advise and support him in his difficulties, to warn him against bad companions and bad habits, to see that wholesome recreation or employment is available to him during off duty hours, and especially to see that he has forceful examples of clean and good living kept before him in a favorable light. In this work the Chaplain plays a prominent part.

In order to fit the soldier to undergo strenuous military training, and to develop his powers of resistance to disease and hardship, the Army conducts systematic physical train-

ing. Physical training instructors are taught anatomy and some physiology so that they may conduct their exercises not only with an avoidance of strain but also with a view to the harmonious development of the body as a whole. The work is carried out under the close supervision of Medical Officers. Men who become especially expert and agile are trained, as part of their recreational training, in advanced gymnastics.

Drill of various kinds occupies a great deal of training time in the Army. All drill aims at the development of habits. Those things which the soldier is required to do without conscious mental effort, and to do always with precision, are practiced as a drill until they become habits and can be performed automatically. Close order foot drill is taught and practiced so as to permit a party of soldiers to be moved about in an orderly manner, to teach the soldier to carry himself well when standing, walking and running, to develop the habit of attention, and for its moral and disciplinary effect in producing a prompt response to orders, and in developing a sense of power and the confidence and unity which well-executed drill movements tend to give to the men in the ranks.

Weapon training is a subject that figures very prominently in training programs. Besides drills with the weapons the soldier is taught to care for and clean his weapons, how the mechanism operates, how stoppages

in automatic weapons may be remedied, how to load, unload and fire, and he is practiced on the ranges firing live ammunition. He is taught a little of the theory of small-arms fire so that he may better understand the practical application to it.

In order to secure military efficiency the preservation of health and the prevention of disease are highly important objects of military training.

The army does not always attain fully the object of its training. Apart from the variations in the human material available and special difficulties of accommodation and equipment that beset it in some instances, there is a natural tendency for the efforts of even the best of men to peter out. And the complexity of army training is such, the obstacles are so many, and the excuses for inaction so plausible, that great energy on the part of the leaders and teachers is necessary to keep up a constant effort, to arouse interest, to reawaken it when it begins to droop and to maintain enthusiasm. Various steps are taken to deal with this situation. One is to have regular changes of appointment, thereby introducing periodically new blood or new brooms among the leaders. But reliance is placed mainly upon regular and systematic inspections by higher authority. These are held to test the current standard and the progress made in each unit.

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In these days when people are speaking of atomic bombs it might be thought that the soldiers' personal weapons did not count a great deal. That would be a tremendous mistake. No matter what other weapons there may be for offensive and defensive fighting, the personal weapon is still important. The rifle and the machine-gun are very important in defense.

*Eamon de Valera in "An Consantóir"*



## Preparation of Troops for Breakthrough Operations

Translated and digested at the Command and General Staff School from a Russian article by Major General P. Tikhomirov in "Krasnaya Zvezda" (Red Star) 7 October 1945.

IN modern warfare, a breakthrough of a deeply echeloned and strong defensive position calls for great skill, a high degree of creative ability, and utmost exertion of energy on the part of the men, officers, and generals. The organization and the technique of the breakthrough, therefore, is undoubtedly the most important phase in the preparation of troops for combat.

First of all, modern defenses are distinguished by their depth. Our troops have often encountered solid, well-developed lines of permanent fortifications which were located far beyond the enemy's main line of resistance. This means that the training of troops must not be limited to the breaching of the first position. It is also necessary to work out, with absolute thoroughness, the problems arising during the breakthrough of the entire zone. Inasmuch as the breakthrough of such fortified zones is difficult, the troops, in order to receive the best preparation in this form of combat must take full advantage of the lessons learned in this war.

While training the troops, some of our officers do not fully appreciate the importance of the character of hostile fortifications and of the terrain on which the organization and the accomplishment of the breakthrough is to take place. And yet, in the course of the training period, one often wonders whether the commander trains his unit in the methods of advance through a wooded area or through an open field. It is well known from our combat experience that in the training for an offensive operation all peculiarities of the terrain should be taken into account.

Our troops are often confronted with the organization and the execution of offensive operations through wooded and swampy areas or wooded, swampy, and rocky areas. Here the range of observation, even from good points of vantage, is usually limited to no more than one and a half kilometers, and

this sharply reduces the effectiveness of artillery and mortar fire.

The training of troops under such difficult conditions should begin with the selection and the construction of a training area with the terrain features which will be encountered on the battlefield. Under these conditions, the most important problem is the skillful organization of artillery and mortar fires. The officer in charge of training must make all unit commanders seek continuously better methods of using artillery and mortar fire. This will compel all the commanders to learn the peculiarities of employing artillery and mortars in the swampy and wooded terrain.

World War II has introduced a number of changes into the old concepts of the employment of fires. Now, the chief and the decisive factor is artillery fire—the main striking force of the Red Army. Consequently, when organizing an offensive, the primary object is to gain superiority over the hostile artillery and mortars. This should be considered in working out the problems involved in all phases of the offensive. Even the commanders of small units without any means for effective countermeasures against hostile artillery and mortars must nevertheless be shown how the artillery superiority is to be attained by higher commanders, for all officers must acquire the skill and the knowledge of how to fight hostile artillery and mortars.

Toward the end of the war, all German infantry divisions in defense had a large number of tanks and assault guns. This fact had completely changed the defensive tactics. Near Leningrad, for instance, the Germans had for the first time employed tanks and assault guns as a mobile armored belt. The enemy used his armor in ambushes and often concentrated it in the centers of resistance located in the rear areas and endeavored to route our attacking troops by sudden counterattacks. These peculiarities must also be

taken into consideration in the training of troops.

It is obvious that the units not trained in the intricacies of fighting static and mobile defenses are not capable of carrying on offensive operations in modern warfare. Therefore, the training areas should be properly equipped and the training conditions should enable the officers and men to acquire practical experience in dealing with entrenched or attacking armored vehicles.

In this training the preparation of the infantry is the most difficult. The emphasis here, must be placed on infantry tactics, without, of course, forgetting other forms of preparation.

In tactical training of infantry, the mastering of the technique of swift and bold maneuver, but without losing contact with the supporting weapons is of primary importance. In breakthrough operations against permanent and deeply echeloned defense lines, the success of the operation is determined by the ability of the troops to advance swiftly and incessantly through the entire depth of the defense with the continuous support of its attached artillery and mortars.

This means that the infantry has to be taught how to advance continuously together with its reinforcing elements to a depth of six to eight kilometers. Moreover, this distance should be covered in two or two and a half hours. The fault of some units in the course of this war, during the training periods for offensive operations, was that while the infantry advanced forward rapidly, the attached reinforcing weapons lagged behind. Heavy machine guns, mortars, and the artillery, were hardly able to advance at all, let alone conduct fire. This caused the attack to die down in the very first hours of the offensive.

Another error committed by some commanders was an attempt to throw the advance into high gear right at the start. This also was never successful; the men rapidly got out of breath, the advance slowed down, and soon stopped. These officers had failed to take into account the law of physical training. All

physical exercises should be built up gradually, and this principle applies to tactical preparations of troops as well.

The objective should be approached gradually. In the beginning, a distance of eight kilometers should be covered in about six or eight hours. Then, day by day, this time is shortened and the tactical problems are made more difficult.

Frontal movements must be avoided. Every frontal attack is to be combined with outflanking and enveloping maneuvers. The training should be planned so that every battalion, company, and platoon understands and knows how to execute this tactical maneuver.

Along with this type of maneuvering, the infantry should master the technique of fire maneuver. All officers should acquire skill and experience in massing fires and achieving fire superiority. They also should be taught how to secure a continuous fire support of the organic and attached weapons and how to fight the enemy's armored vehicles.

Our infantry should be trained to be self-sufficient in overcoming obstacles ranging from the least to the most difficult, including water barriers. A great deal of emphasis must be placed on assault operations against reinforced-concrete and earth-and-timber pillboxes. Another phase of training is to be devoted to securing the trenches and strong-points captured from the enemy, and to repelling enemy counterattacks.

Actual combat experience has brought about new problems, such as resumption of the offensive interrupted by an unexpected situation. Not infrequently, the infantry and artillery commanders were not able to resume operations on the second day of the breakthrough and blindly repeated the same artillery and attack methods they used on the first day of the operation. They did not realize that now they were confronted with a different enemy, disposed in a different manner, and possessing a different grouping of artillery and mortars.

For this reason, the problems related to the resumption of an interrupted offensive should be the subject of special training.

The main objective of this training is to develop in the officers the ability to organize temporary defense while in the process of advancing. Here, too, the officers learn the methods of reconnaissance, of selecting the lines of departure, of determining the order of moving out of the infantry units, and of rapid organization of advance.

An important element of tactical training is the mastering of the technique of deploying the second and the following echelons (waves) and the ability to conduct reconnaissance during the offensive.

It is imperative that the training of troops for breakthrough operations be based on the lessons learned in this war.

### The Four Phases of the Brazilian Expeditionary Force

The participation of the Brazilian Expeditionary Force (BEF) in the struggle in Italy may be divided into four periods.

The first began on 15 September 1944 when a detachment commanded by General Zenobio da Costa went into the front lines in the vicinity of the west coast, after nearly two months of training in Italy. It contained elements of all the arms and services, and the Fifth Army was engaged in the battle of the Arno where it had already had success. Fighting in "combat teams," the Brazilians progressed deeply into the enemy position, taking Comaiore and Monte Prato.

The second period of our operations extended from the beginning of November to the middle of February. It was in this period that the First Expeditionary Infantry Division was employed, in the area to the north and west of Porretta Terme, on the west bank of the Reno river. General Mascarenhas de Moraes, who had been supervising the training of the latest troops to arrive, assumed command of all the units of the Division.

The third period extended from the latter part of February to the beginning of March. In this period our operations were characterized by attacks on positions that had been fortified by the enemy. The snow disappeared and it was warmer. We attacked the Germans, who were established in excellent positions, and routed them, as did also the American 10th Mountain Division which was fighting alongside us under the IV Corps. On this occasion we took Monte Castello, which we had attempted to take in November and December.

The fourth period began in April and came to a close with the end of the war in Italy on 2 May 1945. Our operations were coordinated not only with the IV Corps and the Fifth Army, but also with the entire Fifteenth Army Group.

The Spring Offensive of the Allies had been launched. From our own standpoint, this offensive may be divided into three phases. The first of them was marked by our attack on the last of the German positions in our zone, culminating with the capture of Montese. The second was the exploitation of this success, with the Germans in organized retreat. We advanced toward Vignola, engaging in battle at Zocca and Marano sul Panaro. In the third phase, the Germans were disorganized, many of them surrendering and many completely routed. We now advanced through Vignola and Turin, passing through Piacenza and Alessandria.

When this advance was halfway completed, the spectacular episode of Collecchio and Fornovo took place. The BEF captured one of the best German divisions—the 148th Infantry.

When this phase, and the war itself, came to an end both the Brazilian troops to the west of Turin, in Susa, had effected a junction with the French troops from the east.—Colonel Humberto Castelo Branco in "Nação Armada," Brazil.

## Analysis of Some Doctrines of Aerial Warfare

Translated and digested at the Command and General Staff School from a Spanish article by Colonel Manuel Martinez Merino, Air Corps, in "Ejército" (Spain) June 1945.

WHEN World War I came to an end, no doctrine of aerial warfare had been elaborated. Combat tactics had had a beginning in that war, but there was no such thing as aerial strategy.

The theories developed by Douhet, Mitchell, and Seversky after 1918 had the following points in common:

1. *War will be total.* Aviation carries war to the furthest corners of the nations. Their entire territories, all their inhabitants and all their resources constitute a part of the front. The allegation that aerial warfare against the enemy's rear was cruel, calling it illegitimate, assuring that it would be prohibited by international agreement, is a thing of the past and no longer considered valid.

2. *The necessity of achieving air supremacy.* The German European campaign, the Normandy invasion, the Allied campaigns in France and in the Mediterranean, were all preceded by the attainment of air supremacy by the victor. The re-embarkation at Dunkirk and the battle of England show that the Germans could not win, because local air supremacy belonged to the British.

3. *Victory is guaranteed to the side that has air supremacy, and is impossible without it.* There have been contradictory attitudes with respect to this affirmation which have gone so far as to contend that in dominating the air, one dominates nothing, since the air is a military vacuum.

In each new battle of the war, it is proved anew that victory would have been impossible without air superiority. Air supremacy has come to be a matter of such importance that some of the campaigns that have been undertaken appear to have been principally battles for the acquisition of air bases needed for ulterior purposes.

The Germans lost one important air battle—that of England. It is almost certain that the loss of this air battle caused them to

lose the war in which, during the first period, they were certain of victory. Possibly few people realize that this battle for air supremacy may have changed the course of history. The men who had been called visionary were proved right.

4. *Great aerial offensives and the total destruction of cities and vital centers of the enemy, and enemy morale, are possible.* Aviation can win the decision with its own means. The destruction of Coventry, Rotterdam, Hamburg, Cologne and other cities, and industrial zones, entirely or partially, leaves no room for doubt as regards the first part of this statement. As to the second part, the achievement of total destruction, is a question of numbers.

As regards the neutralization of the fighting spirit and the decision of a war by means of air action, the failure of the Luftwaffe in its bombing operations has usually been taken as the supreme negative reply. There is nothing more untrue. If, in the battle between the two air forces, the Germans lost, this fact cannot be considered as any argument against the value of air attacks, since the first condition for realizing them is the attainment of air supremacy, and the Luftwaffe failed to achieve it.

5. *Aviation should form an army separated from the ground and naval forces—the army of the air. The auxiliary air forces—those belonging to naval and ground forces—must disappear.* This affirmation has been the most debated point of the two opposed sides. One of the most serious obstacles the creation of armies of the air has encountered, is the fact that aviation was the offspring of land and sea forces in which there was a natural reluctance to relinquish their hold on so useful an element.

Of the principal air forces that were engaged in the war, the British, German, French, and Italian were organized as independent arms; the Japanese and the Rus-

sian were divided into army and naval aviation, and the American, which also is composed of army and naval aviation, has reached a state of organization, today, where there exist in the War Department two equally autonomous staffs or departments—ground and air.

German aviation has shown that a ground army without aviation of its own is not deprived of necessary support. Rather, the opposite defect may be laid to the charge of the German Luftwaffe, in spite of the fact that even the antiaircraft artillery in the hands of the army belongs to the air forces and is served by its personnel. Too much preoccupied with the matter of having plans capable of close cooperation with the ground forces, Germany failed to give thought, perhaps, to the need for strategic aviation, for true aviation. This caused her to lose the battle of England.

In addition to the common ideas we have just noted, each of the doctrines possesses a few points peculiar to it alone.

One of the most discussed of them is Douhet's doctrine: *Resist on the surface in order to be able to attack in the air*. It is quite obvious that, so far, Douhet has not been correct in his prediction that ground warfare would be static as in the preceding war; with the advantage on the side of the defense, whence was born the idea of winning the decision by means of an aerial offensive.

More modern in his views, Seversky disseminates a new idea relative to this point: *It will first be necessary to determine whether the war is one of possession or elimination*. According to him, when it is a war of possession, occupation should be effected by means of armies advancing by land, sea, or air; when it is a war of elimination, this can be effected better through the use of the air fleet.

In aerial warfare, technical surprise is definitive. Quality will always count for more than quantity. This principle which is common to both Douhet and Seversky, was proved during the two World Wars and in the Spanish civil war.

Against air forces, the only possible de-

fense is attack by means of an air force. Experience has shown that regardless of the amount of antiaircraft defense, or even of fighter aviation, a powerful air fleet always passes and bombs its objective. This does not mean that fighter aviation, antiaircraft defense or defense of other types should be done away with, but it does teach us that only aviation employed offensively gives total freedom from danger from the air.

With air supremacy, supremacy on the seas can be achieved. Ships will be sunk by means of planes. This war has done away with many illusions and ideas relative to security. The Norway campaign was the first surprise. The German success with a poor squadron, though opposed by the best navy in the world, is a perfect demonstration of what air supremacy is able to do on the sea.

The re-embarkation of Dunkirk would not have been possible in spite of all the efforts of the British fleet if the RAF with its Spitfires and Hurricanes had not gained air supremacy at that point. In order to prevent the battle of the Atlantic from being lost to the German submarines and planes, the Allies were obliged to resort to air supremacy, accompanying their convoys with their planes and establishing air bases at strategic points.

Lastly, the sinking of the battleships *Prince of Wales*, *Repulse*, *Tirpitz*, *Roma*, *Haruna*, those at Pearl Harbor, and others in the Pacific, has completely proved the possibility of sinking ships through air action.

As regards the intervention of the army of the air in ground operations, General Montgomery, in his personal experiences, both in the disaster in France as well as in his successes in the Mediterranean area, has arrived at the following conclusions which have been expressed by him on several occasions: The early failure of the British Army was sharply in contrast with its later successes. At the beginning, the men were driven from their positions by the enemy's dive bombers, against which they felt themselves powerless. It was learned that before beginning a ground offensive, air supremacy



was necessary. Experience also showed that certain changes in the organization and employment of the supporting air forces were necessary.

Air victory is the key to victory on the ground. If one notes the campaigns in which the British took part, says the General, from El Alamein, Tunis, Sicily and Italy, it will be seen that they never began the ground operations till the air battle had been won. "The air battle must always be won before that on the ground or on the sea."

### Different Air Organizations

The Luftwaffe was organized as an air army independent of both ground and naval forces. There existed no independent air forces belonging to these arms, and all necessary cooperation was given by the Luftwaffe in a close collaboration. Unity of command was achieved by the existence of the Wehrmacht, a joint organization which included all the armed forces of the nation (ground, sea, and air).

When it was necessary to employ the Luftwaffe on purely aviation missions (attack on England in 1940 and later defense of Germany), the German army of the air proved to be inadequate. Lack of this strategic arm caused her to suffer defeat in the battle of England, which was so definitive that it annulled all previous Nazi victories.

German errors in this battle were: the attempt to engage in strategic bombing with aviation which did not have sufficient combat ability to eliminate or neutralize enemy air power; bad selection of vital objectives; inadequate destructive power in comparison with useful load of the aviation of that day; and lack of continuity of action.

*Great Britain.*—In Britain the RAF was created, together with naval aviation and an independent Air Ministry.

When the war began, Great Britain was in the forefront from the standpoint of the quality of her aviation, and had her own doctrines. But aviation had not been accepted with the view of basing on it any sort of strategy, and this lack of confidence was re-

flected in a weakness in Britain's air force which led to serious disasters.

*The United States.*—Air doctrine and organization are still a matter of discussion in the United States. In principle, its aviation is divided into Army and Navy aviation, each independent of the other.

The aviation of the Army, the more important of the two, has evolved from a service within the Army into an arm with its own recruiting and officers, and at the present time the War Department is divided into two equally important parts, Army and Aviation, with separate high commands and staffs. There exists, however, a service force that is common to both of them.

The Army Air Forces, therefore, have unity of command with respect to the Army, but unity is lacking between the two different types of aviation, which creates administrative and procurement problems. An effort is now being made toward the unification of the high commands.

The American naval aviation is also very powerful. Due to the enormous volume and power of the American Navy, perhaps in the United States as in England, the complete union of all aviation, especially as long as carriers exist, may present a difficult problem.

*Russia.*—The Soviet military aviation in 1941 did not possess unity of command, being divided into army and naval aviation. Its dependence on the Communist Party was implemented through the Commissariat of War.

Within the Army, aviation formed an arm with special recruiting and uniform: the air forces were organized into divisions that were under the command of the Army. Russia has had very powerful air forces from the point of view of numbers, but these have not been well oriented from the standpoint of equipment or employment. The air forces of Soviet Russia have not, really, been engaged in aerial warfare, but have confined themselves to the support of ground forces without any sign of strategic employment. The recent evolution of Soviet aviation is believed to have progressed but little in the doctrine of employment.

*France.*—French aviation, insufficient both in quality and in numbers, disappeared within a few days under the blows of the German aviation.

### The Future

The recent war can only be regarded as a transitional period between the birth of aviation (1914-1918) and its all-out employment, which is still to come.

In the future, we shall no longer be able to speak of doctrine of air warfare, just as we shall not be able to speak of doctrines of ground or naval warfare; we shall have doctrines of general or total warfare, including all three elements. In summary:

(a) Up to the present time, it has been said that some countries were land powers, and others naval powers. In the future all will have to be, first of all, air powers, and afterwards, whatever their geography dictates.

(b) Air forces will be armies of the air, even in those countries in which their separation from the ground or naval armies appeared most difficult, on account of the traditional preponderance of the latter.

(c) No country will dare go to war without certain or probable air supremacy. Air supremacy is the only indispensable factor.

(d) Between air powers, air supremacy will not be total, but local or relative.

(e) Air power can be defeated only through greater air power.

(f) The number of planes in an air force will give but a slight idea of the power of the country, if their relative quality is not taken into consideration. In the air, technical surprise will always be decisive.

(g) The offensive power of an air force varies inversely with the distance to the objective.

(h) The action of the army of the air will be preponderantly offensive. Against air at-

tacks, the only way to defend oneself is to attack.

(i) With air supremacy, the operations till now regarded as the most difficult will be easy—naval or air landings, re-embarkations, blitz-advances, blockades, etc.

(j) Without air supremacy, surface or air operations which appear very easy will be difficult or impossible.

(k) The nation that has not "Nationalized" the construction of its planes and the procurement of the fuel necessary for them, can not have air power.

(l) War will be total.

(m) When total possession of an enemy country is not contemplated, an aerial offensive will suffice for its elimination.

(n) The particular tactics and strategies of the ground and naval armies will have to be changed, the third dimension being admitted into all their plans.

(o) Offensive strategy is the specific mission of the air arm.

(p) A supreme command, acting as coordinator of the efforts of the three armies, is indispensable.

(q) The air battle must not be lost; it will always be the first to be met before any other battle on the ground or sea.

(r) Aviation will not be able to dedicate itself exclusively to its mission of aerial warfare. It will have to dedicate a part of its forces to the support of surface operations.

(s) A naval fleet is not sufficient to control the seas anywhere within range of land-based aviation.

(t) War may have a ground, a naval, or an aerial decision, but this will always be won in collaboration with the other elements.

(u) War between countries without land frontiers will be a mission of the air forces. Carelessness with regard to either air action or ground support may lead to disaster.

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The impetus of all activity comes from above. There are no poor groups. The poor ones are the colonels. There are no inefficient batteries; it is the captains that are inefficient. The equipment gives an idea of the unit commander.

"*Revista Militar*," Bolivia

## The Strategy of the War

Digested at the Command and General Staff School from three articles by Major General H. Rowan-Robinson in "The Navy" (Great Britain) November and December 1945 and January 1946.

IMPERIAL strategy in pre-war days was based primarily on command of the sea. And quite rightly, for such command was vital if Britain was to be supplied with food and raw material, was to transport her troops overseas, and was to maintain the communications whereby the Empire could fight as a single unit. Authorities varied, however, in their ideas as to how command was to be established, some thinking in terms of battleships, others of aircraft carriers, others again of small craft; and there was a wide underestimation both of the aerial factor and of the menace of the submarine to our life-lines.

Ascendancy in the air took second place. People realized its importance in the direct and indirect protection of Britain, but not that it was essential to the mobility and protection of fleets and armies. The shield to the country against aerial assault was to be furnished, however, not by gaining control of the skies but by the threat or the deed of retaliation. To that end, the policy of the air staff was to build two bombers to every fighter—a policy which proved a sore handicap to our troops in the retreat to Dunkirk and which, but for the temporary technical superiority of our machines, would certainly have lost us the Battle of Britain.

The third factor in our strategy and the one regarded as of least importance was the army. Its role was to furnish a strong antiaircraft defense at home, to play a minor part on the Continent in subordination to our French allies and to guard naval and aerial bases throughout the Commonwealth.

It was our weakest spot. It contained indeed, a few highly trained divisions in Britain, Egypt, and India, but the Territorial Army, full of good stuff but sorely lacking in the training needed for modern war, had been only recently embodied and the conscript at the outset displayed no great enthusiasm

for his task. Worse still, it was controlled by a self-confident civilian authority bemused by doctrines or beliefs to which every leading soldier was strenuously opposed: namely, in the first place, that we could place implicit trust in the French army against whose weakness the Government had been definitely warned; secondly, that being an insular Power, we could take as much or as little of the war as we might desire; thirdly, that defense was superior to offense, and therefore that the Allied armies would be quite safe behind the Maginot Line. In vain did the Chief of Staff resign rather than subscribe to such fatuous heresies. He was to see their fruits ripen in the nauseating inactivity of the first or "phoney" phase of the war and, later, at Sedan, Dunkirk, in the fall of France and in the consequent threat to our existence.

For a year after our defeat we stood alone with Italy added to our foes. That period was momentous in our history. It was then in the grandest fashion that we won the Battle of Britain—a victory which gave us the assurance, eventually justified though but by a narrow margin, that Britain would never be decisively beaten. It was then that we slowly built up our strength, thanks to Lend-Lease—that magnificent gesture—and thanks to the naval guard against the savage assaults of the U-boats. It was then that we struck the most daring and imaginative blow of the whole war in robbing our tiny guard at home to send reinforcements to the Middle East at a moment when Britain's own peril seemed to be at its height.

With the advent to power of a virile leader in Winston Churchill, the Maginot mind had been swept out of our councils, never to return. His stroke laid the foundations, both for Wavell's victories and for the eventual domination of the Mediterranean.

Crete was an unhappy interlude, forced upon us not by the needs of strategy but by

psychological and moral reasons. It threatened our hold on the Levant and seemed likely to open a way through the Middle East via Syria. Happily for us, Hitler was then concentrating for his assault on Russia. In the Aegean he had suffered more loss than he could afford, and dared not seriously pursue his effort there, even with the aid offered him by Vichy France.

The 22nd June 1941, brought our isolation to an end and, therewith, the second phase of the war. Henceforth, the Soviet army, supplied to no small extent by British ships escorted through perilous seas, was to be a permanent and principal factor in Allied strategy. In our time of loneliness, much as we had to thank our brilliant leaders and the gallant fighting of our warriors of all services, we may have owed even more to Hitler's mistakes. It is an arguable point whether or not he could have broken through our naval and aerial guard after Dunkirk—certainly there was no army to oppose him. But it is sure that, in the full flush of success when the morale of his men and the prestige of his victories were at peak, he should have concentrated his navy, his aircraft and the bulk of his army to destroy what he well knew to be the stiffest obstacle between him and a thousand years of Nazi rule.

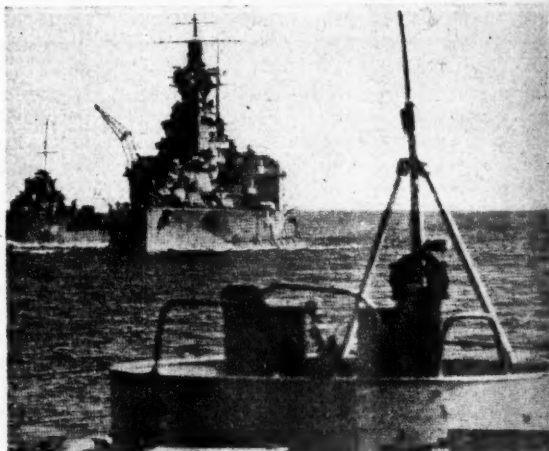
Victory would have won him the war; a repulse would not have caused him to lose it. Far beyond the hazards of the venture were the prospective rewards.

Malta could no longer act as a great naval base; but, otherwise, it was a pearl of great price. And it lay within sixty miles of the airfield of Sicily on which Hitler could have concentrated not only the *Regia Aeronautica* but also the bulk of the *Luftwaffe*. Fortunately for us, ohwerver, he failed to do so; failed to exploit the flexibility of the air arm.

His culminating fault lay in invading Russia before he had eliminated Britain. In

doing so, he created that second front which would grow in menace until it overwhelmed him. The second phase of the war was over, the worst dangers past. Britain had ridden out the storm.

The next phase was short. It lay between the assault by the Germans on 22 June 1941 and the first check to their victorious army at Moscow and Leningrad four months later. At one time the situation looked dark indeed. The Germans made rapid progress, defeating their opponents repeatedly. In the process they captured vast numbers of prisoners. Not satisfied, however, they gave vent to gross



Domination of the Mediterranean—HMS *Valiant* oiling a destroyer at sea.

exaggerations, largely in order to impress Japan and persuade her to join in such an easy conquest. Certainly, had she done so, Russia, sandwiched between two powerful foes, could hardly have survived. Instead, she withheld her support. German victories and loud-voiced claims may indeed have decided Tojo to strike, but the nature of his stroke was wholly to Hitler's disadvantage. It was not aimed at Russia, and it confronted him with the vast potential of the United States, greater by far than the power of Japan at its zenith.

The 16th October marked the limit of the

German advance in 1941. Stalin had collected reserves from his eastern territories and had held them with admirable patience until his opponents had exhausted themselves against the Soviet positions covering the capital. He then launched his counterstroke and had considerable success, not alone in stemming the enemy's progress but also in regaining some of his lost territory.

In the meantime, British troops re-established their positions in the Middle East. They conquered Syria and Iraq and, in conjunction with the Russians, occupied Iran. Thus Turkey and the southern flank of the Soviet Union were safeguarded. West of Egypt, the British held Tobruk. Otherwise the fighting in that theater was on a small scale and indecisive.

The fourth phase opened with the treacherous attack by Japan on Pearl Harbor.

In the attack the Japanese destroyed or damaged so many American warships and aircraft that they obtained complete command in the Pacific for some eight months. Thereby endowed with the initiative, they were able during that period to transport their armies at their pleasure, to seize practically all the islands in that ocean, to conquer Malaya and Burma and to threaten India and Australia with invasion. Long and secret preparation, plus calculated perfidy, had enabled a small island power to inflict seriously incapacitating wounds on two great powers, both fighting in their main element.

The Japanese had fortunately failed to draw profit from their success either by seizing the Hawaiian Islands as a base for an attack on the United States or for severing the connection between Australia and American. Our ally was therefore able to proceed undisturbed with his production and training, to dispatch reinforcements to Australia and to change that continent from a danger-spot into a secure offensive base. Consequently our situation began to show signs of improvement. In May, the American fleet administered a salutary check to the enemy in the Coral Sea. A month later, it inflicted a severe defeat on him off Midway Island, when on his way to repair his omission to

take Hawaii. These two engagements robbed him of his command of the Pacific; and they also brought the aircraft-carrier into the limelight, causing the United States to embark on an expansion of her previous carrier program far beyond the capacity of her opponent to emulate.

In order finally to obviate the threat to Australia, the Allies struck at the Solomon Islands where, early in August, they seized an airfield on Guadalcanal, thereby initiating a struggle which was not completed on Guadalcanal until March 1943, and not in the group as a whole until the Japanese surrender. The battle was largely one of attrition. It was won only by a hairbreadth, American carriers in the Pacific being reduced in its course to a single damaged vessel. It resulted in the virtual abandonment of the Pacific by the hostile battle fleet and in its withdrawal to home waters, thus opening the field for the American counterstroke to follow.

In New Guinea, the enemy reached a point unpleasantly near Port Moresby. He was thrust back in October 1942 by an Australian force under MacArthur which, combined later with Americans, and enjoying magnificent naval and aerial support, was to win its way, largely through a secession of water-envelopments, along 2,000 miles of jungle-clad coast, thereby, for all essential purposes, effecting the conquest of the island.

Elsewhere, during the first half of 1942, the Allies were in evil plight. In Russia, the Red armies were driven to the Volga and the Caucasus. Their retreat was due primarily to defeat, but also in part to the traditional Russian strategy of evading complete disaster by making use of the vast available space—*reculer pour mieux sauter*: a strategy afforded the best possible chance by Hitler whose policy it was to pursue to the limits set by exhaustion and then to hold conquests to the last in spite of conditions obviously adverse—in this case a line of supply 1,500 miles in length running back to Berlin and under the constant attack of guerrillas.

In the Middle East, Auchinleck, opening an offensive in November 1941, just managed



to defeat Rommel near Tobruk and then pursued him to El Agheila. There, however, his strength emasculated by the immense length of his life-line, he was thrown back to a position covering Tobruk. Defeated again in May 1942, he lost Tobruk and was compelled to beat a rapid retreat closely pursued by an exultant foe. Only at El Alamein, with seventy miles of Alexandria, was he able to turn and fight. This was a critical point in the war.

Hitler might have completed the victory had he transferred the bulk of the Luftwaffe from Russia to Egypt. Fortunately, however, he failed to grasp the opportunity, and Auchinleck's line holding, the situation was saved.

At sea, the position was at its worst. Losses had been cataclysmic: in the Far East, two capital ships, three cruisers and a carrier; in the Mediterranean, *Barham*, *Ark Royal* and two cruisers sunk and *Valiant* and *Queen Elizabeth* severely damaged. Our shipping, denied the Mediterranean, except for the Malta convoy, had to voyage to the Middle East by a route 12,000 miles long; and that at a period when it was being strained to the utmost by U-boat attack in the Atlantic. Nevertheless, the spirit of the sailor and his faith in his great instrument were eventually to prevail.

In a Britain bursting with Allied troops, the cry of many lips was for the immediate formation of a Second Front in order to save Russia from destruction. The Allied Command held, however, unswervingly to their purpose. They planned offensives indeed, but only where and when feasible. As summer wore on, prospects brightened.

Then came the turn of the tide: El Alamein, the descent of North Africa, the great Rus-

sian counteroffensive, and the elimination of the Axis forces from Tunisia.

In July 1943 the Allies, aided for the first time, though with no marked success, by airborne forces on a considerable scale, effected a landing on Sicily. In less than six weeks they had conquered the island and, a month later, they landed in Italy. At Salerno they had difficulty in retaining their



A critical point in the war—at El Alamein, where the tide turned in our favor, an infantryman takes cover as a 2,000-pound bomb bursts.

hold on the beaches and might have been driven into the sea but for *Warspite* and *Valiant*, which were summoned to the rescue and countered the hostile onslaught with their sixteen-inch guns. Advancing thence, they quickly occupied Naples and the airfield at Foggia, but thereafter had to fight their way slowly forward through the mountains in the grimmest of winter conditions until brought to a halt by the Gustav Line

covering Rome. Delivering fierce assaults there, they drew on themselves the bulk of the German reserves, and that enabled them to effect a landing at Anzio in the enemy's rear. Unfortunately, the scarcity of landing boats was such that only two divisions could be set ashore at a time and, being consequently unable to exploit their success quickly they were attached and held on the beachhead. Not until four months had elapsed did they manage to break out.

In the Pacific, the Americans, in a three-pronged offensive, retook Attu and Kiska in the north, carried out the great sweep through New Guinea in the south, and, in the center, captured successively the chief islands in the Gilbert and Marshall groups. In June 1944 they landed on Saipan—an island from which they could bomb Tokyo, only 1,300 miles away. For Japan Nemesis was at hand.

In Burma, there was stalemate until early in 1944, when the Japanese launched a skillful and determined attack in Arakan which, though only after some anxious moments, was completely defeated—the first British victory over our oriental foe.

The outstanding feature of the invasion of France was the elaborate nature of the preliminaries. The spirit of our leaders was such that the project came under consideration immediately after Dunkirk. Planning began in the summer of 1942, and action in February 1944, when the enemy's bombers were deprived of the power of decisive intervention by the virtual annihilation of his fighters. Later, all communications of relevance to the operation were hammered to an extent that would seriously hinder the movement of the reserves on which Rommel would depend for his counterstroke. Finally, came the bombardment of coastal defenses.

On the sweep through France that followed Falaise, supply, as so often the case, set its limit. With the approaches to Antwerp closed, the buildup of stores for an assault on the Siegfried Line would be a matter of months. Eisenhower therefore attempted to restore continuity to his advance by turning that line through a combined attack of ground, and airborne troops. He failed be-

cause the ground formation was given too long a distance to cover in the time available. The lesson of Arnhem was, however, of value later for the passage of the Rhine.

Between the two came Rundstedt's remarkable counterstroke. He managed to effect concentration and surprise in spite of bombed communications and Allied aerial reconnaissance, and he advanced to a depth that caused some anxiety. The High Command had lent reserves for the stroke and, presumably, aimed at disabling the Western Allies during the impending Russian offensive.

In the east, the Russians reached their objective in three jumps divided by long pauses. The amazing length of their advances was due first, to the meticulous preparation and the magnitude of the blows which, together, gave them a high initial momentum; and, secondly, to their sound use of superior force. They applied pressure relentlessly along the whole front so that at no point could the enemy denude his line in order to provide troops for a counterstroke elsewhere.

In the Atlantic, thanks largely to increased production of escort vessels, to the extended use of long-range aircraft and to the loan of the Azores, the Navy maintained the upper hand of the U-boats.

In the Pacific, Nimitz and MacArthur stepped from island to island up the approaches to Japan. For the assault, whether by sea or land, they always brought maximum force to bear—a procedure economical of life and time. Once the Allies were within bombing range of Tokyo the Japanese fleet, which had remained for two years in the inner sea, was compelled to come out and give battle, but it never stood a chance. Lacking power of aerial reconnaissance, their plans went awry and they were inevitably beaten in the battle of bombs. Their suicide planes proved indeed a serious nuisance, but only for a short period prior to the advent of the radio-bomb.

The strategy of the war and discoveries, subsequent to the war, of enemy weapons nearing production, point to a number of



Fighting in the Pacific.

conclusions of which perhaps the following are outstanding:

The nature of modern weapons is such that the nation must be ready to deal immediately with aggression. It cannot wait for decisions by the Security Council, councils being proverbially slow, or for any form of mobilization.

Britain alone would lie definitely in the second rank of Powers. The British Empire is unquestionably a Great Power. Hence unity of voice in world councils, and unity of action in foreign affairs and defense are most desirable if the Commonwealth is to exercise its influence in the forging of a new world. Five voices, five opinions, would shatter themselves vainly against the single voice and undeviating policy of Russia. As to defense, security of imperial communications is the first essential.

Corresponding to unity in the Empire there should be unity among the fighting forces.

In all the talk of atomic bombs, rockets, aircraft-carriers, etc., there is a danger of confusing instruments and their use with principles and their application. Weapons come and go with the advance of science, but principles are steadfast. The aircraft-carrier, for instance, proved to be the outstanding naval weapon in the Pacific. The Americans, therefore, built large numbers of them and proved correct in their judgment. But the carrier embodies no principle and may at any moment become outdated. We need therefore to be cautious as to following the example of the United States Navy Department in suggesting for its future fleet 116 carriers against eighteen battleships. It is even possible, indeed, that big ships as a class may have to go, deeprooted though they may be in our system.

## Modern Naval Warfare as Seen by a Navy Man

Translated and digested at the Command and General Staff School from an article in French by Captain Lepotier, French Navy, in "Revue de Défense Nationale" (France) October 1945.

THE international character of the last world conflict has resulted in attaching still greater weight than in the past, to the importance of being able to control lines of sea communications. It was, in fact, the battles for the control of sea lanes that decided the outcome of the war.

Even in the case of belligerents on the same continent, naval supremacy, which made the blockading of the adversary possible while the other nation has access to the resources of the entire world, is of inestimable advantage. When the belligerents are separated by oceans, it is obvious that this supremacy conditions everything, for operations can then be undertaken in the enemy's territory.

On land, victory is clinched by the occupation of the enemy's territory. On the seas, it insures exclusiveness in the use of sea routes for purposes of transportation. Up to the present time, maximum efficiency in this transportation is assured only by the use of ocean vessels, each carrying an amount of cargo equal to that carried by ten trains, or 2,000 trucks. Naval operations are undertaken, therefore, to insure sea traffic of maximum cargoes with the least risks and where it is most useful to the general strategy. It is also the most difficult problem, for ships are very vulnerable and they cannot be converted into combat vessels and still retain their efficiency as carriers.

Aviation, submarines or surface naval craft can only insure emergency service of very low efficiency incapable of supplying operations of any importance. We have noted this in the case of the communications of the *Afrika Korps* during the battles of the Desert and Tunisia and, inversely, when the attempt was made to supply Malta with its essential gasoline and food by means of submarines. The same was true in the case of the communications between Germany and Japan: a submarine carried from fifty to

one hundred tons in sixty days of travel while a surface blockade runner was able to carry from 6,000 to 10,000 tons in the same time. The conduct of a war to a victorious conclusion works out from this quite naturally, for exclusive use of sea routes for transportation purposes permits the supplying of armament beyond the reach of enemy air attacks, the training of enormous armies, their concentration in advanced bases, and lastly, their transportation to the battlefield.

Everyone is agreed that in order to get transportation through, it is necessary to destroy the enemy forces capable of preventing it. But for the attainment of this objective, the "traditionalists" hold that it is necessary to oppose them with more powerful and numerous forces of the same kind. In other words, to seek naval superiority, while those of the new school place their hopes in the employment of new and much less costly weapons.

It should be noted that as naval weapons are improved, their effects become more and more frightening, yet so far there is no example of a nation or alliance of nations being able to use the seas for decisive purposes without possessing naval superiority. On the contrary, in the absence of this superiority, modern naval forces are able to hinder and make this exploitation of the seas almost impossible by even the most powerful of merchant fleets.

Twice, in 1918 and in 1944, all-out and intensive submarine warfare has finally been overcome by the powers that possessed superiority in surface craft. The same thing was true with respect to aerial warfare in spite of the sensational initial successes achieved against naval units, especially at Pearl Harbor and Malacca. We hasten to say that this does not mean that it was surface ships that won over the submarine and airplane, but that superiority in this type of ships remains the necessary condition for in-

uring full efficiency of the means employed in antisubmarine and antiaerial warfare.

The submarines were conquered by use of a considerable number of escorting surface vessels, mine detectors, depth-bombs, and escort carriers which insured permanent aerial surveillance over great distances around the convoy. This disposition was not justified except on condition that it could not be penetrated by powerful enemy surface vessels, and this is where we observe the protective role of friendly escort vessels that are able to intercept enemy sorties. We must also remember that when the German battleships were sent out against the British convoys in the Atlantic in 1941 there was for the time being no other solution than to assign to British ships of equivalent power, the task of protecting the convoys.

The objection could be raised that carrier-based fighter planes are able all alone to combat the enemy ships effectively before they arrive within range of gunfire, and thus the air fleet has triumphed over the battleship. It is true that the two battleships *Prince of Wales* and *Repulse*, which left Singapore on 8 December 1941 to attack Japanese convoys, were discovered and sunk by enemy aviation. On the other hand, although they had for the moment lost their superiority in battleships after the air attack on Pearl Harbor, the Americans did not hesitate to go into the waters controlled by the enemy fleet, with nothing but airplane carriers and light surface units. As a result of this, the great air-naval battles of the Coral Sea and Midway Island took place, in the course of which the air forces of the two adversaries attacked the naval units, causing great losses.

The first of the decisive battles lasted six months and had as its objective the island of Guadalcanal, the Stalingrad of the Pacific. During the first months the American air-naval forces did not succeed in dominating the neighboring sea areas, an essential condition for success. Their light forces were several times wiped out by the enemy, notably during the night of 8-9 August 1942, when they lost four heavy cruisers. It should be

noted that the situation did not turn in their favor until they were able to use the 35,000-ton *South Dakota* and *Washington*, which decided the issue of the "three-nights battle" of 12 to 14 November 1942.

Before the decisive intervention the *South Dakota* had shown, in the battle of the Santa Cruz islands on 26 October, that the battleship was now able to face an air attack with chances of success. The American ships were attacked by more than 170 Japanese planes, fifty-six of which were shot down. The new American battleship alone brought down thirty-two of them during three unsuccessful mass attacks. On the other hand, the airplane carrier *Hornet* was sunk, as were the *Lexington* and *Yorktown*, while the *Wasp* was torpedoed by submarines. It should also be noted that certain of the ships had to be finished off by American torpedo boats because, disabled as they were, they could no longer keep up with the main force.

In European waters, the British airplane carriers *Courageous*, *Ark Royal*, and *Eagle* were torpedoed by submarines, and the *Glorious* was sunk by gunfire from the *Scharnhorst* during the Norwegian campaign. From all this, it seems that, granting that the airplane is to be an essential weapon in naval warfare from now on, it has not, however, as yet definitely supplanted any other weapon; and that supremacy in surface units, adapted to modern air-naval warfare, is still necessary for obtaining victory.

To insure the immediate participation of planes in a sea battle, it has been thus far necessary to carry them on ships provided with a flight deck. It does not seem that a considerable increase in aerial autonomy (which is possible in the future) will be able to free us from this necessity, because either the plane will become a flying ship with equivalent radius of action, and then it will no longer possess the ability and speed necessary for the present type of combat (dive-bombing, torpedoing, machine-gunning, acrobatics, etc.); or else, if it desires to retain its present capacity and characteristic, it will have to sacrifice autonomy and take off from



a position close to the field of battle, from a carrier. It remains for us to decide the dimensions of the ship which will carry the fighting planes. The Japanese have built a combination of battleship and plane carrier, the front half of which is that of a battleship provided with heavy caliber guns, and the rear half, that of a carrier. Both English and Americans have studied this formula, which has also been popularized in the press. It is to be feared that such a ship would be a poor battleship and a poor carrier. As regards the first point, this appears true not only in that it would possess only half the artillery of a complete fighting ship, but especially in that the presence of planes, and therefore of gasoline in tanks and pipes, would present a very serious fire hazard (nearly all the plane carriers that have been struck by shells, bombs, or torpedoes, have been burned and this risk has led to getting rid of the few catapult-launched planes carried by war vessels at the beginning of the war). As regards the second point, it would be merely a plane carrier with its capacity and flight deck reduced by half.

The Anglo-Saxon navies have a leaning toward the tactical combination of warship and carrier, with each of these ships possessing practically the same characteristics as to protection and antiaircraft defense and, in addition, the one carrying the largest possible caliber artillery and the other the maximum number of planes of the most efficient type for combat. This appears to be the basic "cell" of the air-naval fleets of tomorrow, but it must be supplemented mainly by escort vessels.

Two principal categories of escort carriers have been designed. The slow, or convoy escort, propelled by motors with a maximum speed of around twenty knots; and the escort vessel for naval forces propelled by turbines with a maximum speed of around thirty knots. In addition, the rapid escort vessel is provided with a group of torpedo tubes.

The second World War, likewise, confirmed the teachings of the past relative to the condemnation of the heavy cruiser. From the 10,000-ton cruiser to the German "pocket battleship," the question is merely one of varieties. It is necessary, however, to recognize the fact that these models did not correspond to conceptions of naval tactics, but, rather, were the product of various technical acrobatics within the limitations arbitrarily imposed by the so-called armament limitation treaties.

War is a single and indivisible thing. To the theories of "air only," "sea only," and "unity of ground operations," the experience of six years demonstrates the vital need for unified ground-sea-air action. It is because of misunderstanding or inability to effect this union, that we experienced the cruel tactical surprise of 1940.

On the seas as on land, the most characteristic evolution that has occurred in modern tactics is the generalized employment of heterogeneous grouping of units acting in close cooperation. Each of these groups is made up in accordance with its contemplated mission, its nature, and importance. On the seas, such a group, which is necessarily air-naval, is called a Task Force by the Americans. This, in our estimate, is the most enduring conception to come out of the recent experience. Coordination, at any given instant, of such mobile forces cannot be achieved except by permanent collaboration. The aviation which enters into the composition of the air-naval operational groups must live on the seas in constant and fraternal contact with the surface and under-water personnel.

In conclusion, the fleets of tomorrow will be, therefore, air-naval task forces whose backbone will continue to be composed of gun-mounted vessels of maximum power, and plane carriers accompanied by light cruisers and fast escort vessels.

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Real bravery in a soldier is noble, generous, respectful of human rights.

*Duque de Caxias*

## Modern Naval Warfare as Seen by an Aviator

Translated and digested at the Command and General Staff School from an article in French by Colonel L. M. Chassin in "Revue de Défense Nationale" (France) October 1945.

MODERN naval warfare is aero-naval in character. Aero-naval operations are those in which naval and air forces are involved at the same time, whether these air forces belong to the navy, to the ground forces, or to an independent ministry. They may therefore be divided into two large categories: combined ground-air-sea operations, and combined air-sea operations without the intervention of ground forces.

Combined ground-air-sea operations (designated by the Americans with the poorly formed but suggestive word *triphibious* warfare) comprise landing and embarkation operations. Air-sea operations, generally carried out on the high seas, comprise aero-naval battles, transportation operations (convoys), and blockades.

An examination of all these operations during the course of World War II shows that the importance of the air arm never ceased to grow during the course of the war, and at present it is evident that none of them could be undertaken without air supremacy.

Judging from the importance of air supremacy, it appears that the airplane carrier has already dethroned the cruiser as the backbone of modern fleets. The question arises whether its reign will be ephemeral and whether land-based aviation will some day supplant the carrier in the navies of aero-naval type.

The great maritime countries were obliged to order the construction, each according to its means, of a certain number of carriers. But in a navy, they were regarded as impedimenta. They must keep out of the way of the ships of the line. Their need to sail into the wind in order to launch their planes was regarded as a serious limitation. They were finally placed in the rear, protected by armored vessels and given a speed superior to that of the masters of the sea to permit them to catch up with the line as soon as they had finished their aeronautical opera-

tions. As a matter of fact, the naval battle continued to be conceived in purely naval terms; following the Jutland type, the air action constituted only a very secondary part of the drama. In the same way, transport operations (convoys) were conceived without any thought of air protection.

On 8 October 1939, the British fleet with its battleships in the lead, after having executed a "sweep" in the North Sea, was attacked in German waters by dive-bombers. Although the bad weather prevented part of the Stukas from finding their objective, those which did succeed in finding it were able to score a hit on a large vessel and came very close to several others. The British fleet was able, however, to reach port without having suffered any major damage; but the lesson had struck home. From then on, the British ships avoided getting too close to German airdromes. They remained prudently behind the nets of Rosyth or Scapa Flow.

From the invasion of Norway on, the importance of air supremacy was always evident. The battle of Crete in particular was an air victory in which the Luftwaffe forced the Royal Navy to fall back. It proved that a naval force without the protection of aviation was incapable of preventing the landing of parachute or airborne troops. Later, at the time of the landing operations at Salerno and Anzio, aviation showed that it constituted the best defense of troops that had been landed. In desperate situations, the counterattacks of German tanks were stopped by the American fighter planes and bombers. Lastly, in Normandy, the counterattack launched on 6 August, by Rommel on the Avranches was stopped by Typhoons with rocket projectiles: the four German armored divisions were not able to make the twenty kilometers which would have turned the tide. The battle of France was won.

In addition to these operations, air power played an increasingly large role in the

purely naval operations in the waters of Europe. It was the British torpedo planes that won the victory of Taranto on 11 November 1940. It was the planes of the *Formidable* which on 28 March 1941 delivered to the British war vessels a crippled Italian fleet off Cape Matapan. Likewise, two months afterwards (27 May 1941) the torpedo planes of the Home Fleet carriers delivered over to the guns of the *Rodney* and *King George V*, and later to the torpedoes of the *Sheffield* and the *Dorsetshire*, a *Bismarck* that was incapable of defending itself.

Lastly, even though the *Scharnhorst* was sunk by the guns of the *Duke of York* on 26 December 1943, it was the planes of the Fleet Air Arm and the Lancasters of the Bomber Command which on 12 November 1944 sank the *Tirpitz*, the last German battleship in service, in the Fjord of Trondheim.

The well-prepared Japanese aggression in the Pacific permitted the Nipponese to seize possession of an immense empire with minimum forces; it sufficed for them to be "not quite as weak" as their adversaries. Thanks to their being installed in Indo-China, they were able to concentrate sufficient air forces to achieve air supremacy in Siam, Burma, and Malaya.

On 10 December 1941, three days after the sudden attack on Pearl Harbor, the Japanese aviation put a definitive end to the theory of the battleship's being able to defend itself against aviation. The *Repulse* and the *Prince of Wales*, which had started out to hunt down the Nipponese fleet without air protection, were sunk by Japanese bombers and torpedo planes. The British Far East Fleet was, for the time being, eliminated.

In the meanwhile, the Japanese had decided to attack territories beyond the range of their airfields. Since they had understood the necessity for air supremacy, they had wisely created "naval attack forces" made up of ships of the line and airplane carriers. It was with such forces that they were able to cover their landings in the Philippines, Wake Island, Guam, and the Gilbert Islands, during the month of December 1941, and at Rabaul

in New Guinea, and in the northern Solomons in January 1942.

In May 1942, Corregidor capitulated and Burma and the Dutch East Indies were conquered. Japanese torpedo planes sank in the Indian Ocean on 6 April, the cruisers *Dorsetshire* and *Cornwall*, and the carrier *Hermes* on the 11th. The Nipponese then plunged toward Australia. They gathered at Tulagi, near Florida Island (Solomon Island Group), and at Deboyne Island, in the Louisiade Archipelago, an invasion fleet comprising numerous troop transports and boats loaded with planes and hydroplanes. This invasion force was protected by two naval attacking forces each comprising approximately two carriers, several cruisers and some twenty destroyers. Its objective was the seizure of Port Moresby and the establishment of bases in Australia on Cape York peninsula.

The tide was turned, however, by the carriers *Yorktown* and *Lexington* in the battle of the Coral Sea. On 4 May 1942 the dive bombers and torpedo planes of the *Yorktown* made a surprise attack on the invasion fleet at Tulagi and sank one heavy cruiser, two light cruisers, three destroyers, three troop transports, one boat loaded with hydroplanes, and four gunboats.

The battle of Midway Island from 4 to 6 June 1942 is extremely interesting, for it represents the first battle waged against a fleet comprising carriers and land-based planes. As a matter of fact, it was the planes of the American carriers which completed the defeat of the Japanese fleet, for when their attacks occurred, the Nipponese had already abandoned their march toward Midway and were on their way back to Tokyo.

Like their adversaries, the Americans also created *task forces* composed of line ships and carriers, but from then on it was clear that the latter played the principal role. The other vessels merely protected the former from enemy air and submarine action. During the course of all the great battles of the Pacific, never was a *capital ship* able to fire a shot at another *capital ship*. All these new-type naval battles were fought between

planes and ships only, the fleets remaining several hundred kilometers from one another.

In 1945 the final assault on Japan showed to what an extent the improved performance of land-based equipment allows a change of strategy. The B-29's made possible the systematic bombardment of Japan as soon as Saipan was taken, though this latter is situated at a distance of 2,450 kilometers from Tokyo. The P-51 fighters, with their great radius of action, provided an escort for the bombers as soon as Iwo Jima was taken, which is located at a distance of 1,200 kilometers from the Mikado's capital. Okinawa, which is 550 kilometers from Kyushu, was the last springboard before the final leap; the new planes being able, from their bases, to insure sufficient cover, even without airplane carriers.

In relation to ocean convoys the air arm has become more and more important. In spite of all the magnificent work done by the escorting vessels it has been necessary to prolong the covering action of the land-based plane till it extends over the entire course. After installing catapulted fighter planes on certain merchant vessels, the protection of convoys on the Atlantic was finally effected by means of a task force with carriers. Later on, from 1943 on, small escorting carriers carrying a dozen planes, were included in all the convoys, and it was from this moment that the battle of the Atlantic may be regarded as having been definitely won. For the plane is the number one enemy of the submarine. Provided with all the detection equipment possessed by boats, its mobility and range of observation endow it with the ability to sight and attack the enemy more rapidly.

This review of the principal aero-naval operations of the war has shown us:

1. The necessity of possessing air supremacy on the seas as well as on the land; hence the growing importance of airplane carriers in the fleets.

2. The uselessness of having airplane carriers in the theaters where the *unsinkable* carriers, represented by land bases, are available.

The strategic value of ships in offensive operations is greatly reduced. Their defensive value is limited for the time being to the zones that are outside the radius of action of enemy air forces. Since we can already see in the near future the day when combat planes will have a range of action of 20,000 kilometers, we see that the world will soon have become too small for the ship of the line. At the most, a few naval units may be preserved for auxiliary tasks under the protection of aviation.

In the face of convincing facts, it is difficult not to reach a conclusion. The new phenomenon of the atomic bomb increases the damages which the plane can inflict upon a fleet—a threat of extraordinary gravity.

Technical evolutions impose constant modifications on strategy and tactics. And it is possible that, during the course of the next conflict, the plane in its turn will become an obsolete weapon.

For the moment, we may consider: (a) that the position occupied by aviation in aero-naval operations has been constantly expanded, the plane having proved that it was capable of assuming all the offensive and defensive tasks which formerly pertained exclusively to the navy; and consequently, that air supremacy gives mastery of the seas; (b) that the existence of the large war vessels (battleships and heavy cruisers) is conditioned by the existence of airplane carriers charged with the mission of insuring their protection against air attacks; therefore, the usefulness of ships of the line is no longer obvious, the carrier becomes the "capital ship," and (c) lastly, that this latter still has a few years ahead of it before it becomes obsolete.

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An order is not given to one or various units but to their commander.

"Memorial del Estado Mayor," Colombia

## The Work of Division Headquarters During a March and Meeting Engagement

Translated and digested at the Command and General Staff School from a Russian article by Colonel A. Lesnichenko in "Krasnaia Zvezda" (Red Star) 9 December 1945.

In June 1943, in order to stop our offensive towards Bolhov, the units of the German 19th Armored Division and 18th Motorized Division counterattacked us in that sector. One of our guard infantry divisions was given a mission to stop the enemy from spreading north and northwest. After a forced march south, this division anticipated the enemy in reaching two localities and had established a defense line. Employing all the available artillery, the units of this division withstood a fierce enemy tank and infantry attack. Later on, after several similar unsuccessful attempts made by the enemy, this division launched the offensive.

The battle that took place in the Bolhov area was a meeting engagement with enemy reserves employed to stop our attack. The success of this operation should be attributed to the proper evaluation of the conditions surrounding a meeting engagement.

The work of a division headquarters in a meeting engagement is a fundamental subject discussed in this article.

The principal duty of the divisional staff is to assist the commander in making a sound decision by furnishing him the necessary information concerning the enemy, our own troops, and the terrain. Topographical reports, condition of roads, schedules of road marches, and reconnaissance plans are submitted to the chief of staff. After a careful study of this information the latter submits a report to the division commander. Using this report the commander decides on a march. Depending on time available, he either issues a verbal order or simply explains the order of march to his staff officers and the unit commanders. From notes taken down by the staff officers a field order is later made up and a march table is sometimes attached. The division commander verbally informs the unit commanders about his plan of action in critical zones. The purpose of

this plan is to insure cooperation between units at the beginning of the engagement.

March schedules are prepared and march orders are executed by the staff officers according to the commander's directives. A written field order is a basic document used on the march. It is much shorter when a march table is attached. Designating the phase lines, estimating the depth of columns, and the march schedules precede the drafting of the field order.

Meantime, the operations section should organize security on the march (particularly when the entire division follows the same route), and should issue instructions to the military police and traffic regulation detachments. A signal communication and coordination table is issued. The probable location of command posts is shown on the map. Plans are provided for antitank and antiaircraft defense as well as combat security.

The operations section is also responsible for appointing a leading unit, the commander of which is ordered to headquarters and is personally briefed on his missions either by the division commander or the chief of staff. This verbal explanation can be supplemented by a written field order. The officer in charge of the leading unit is issued a signal communication table, two more copies of which are kept by the chief signal officer and the operations section.

If no plans for road reconnaissance have been provided, the chief of the operations section decides upon areas to be reconnoitered, personnel and means of transportation to be used, time schedules, and forms of report to be submitted to the headquarters after the completion of this mission. One of the assistants of the operations section is appointed as a division headquarters reconnaissance group commander; the group also includes representatives of the arms and services and one officer of the advance guard.



Regiments are made responsible for reconnoitering their respective areas.

The successful control of units in this engagement largely depends on proper location of the command post during the march. Actual experience justifies echelonment of the division headquarters in all types of operations (usually two echelons). The location of the first echelon is selected so as to provide full control of units during the march, and especially upon entering the combat. Consequently, the commander and his staff should be at the head of the main column.

Well-organized liaison and intelligence services will insure efficient control of units in the march formation. Every column and regiment should have divisional communication means. Regimental signal officers march with their respective headquarters. The signal center marches with the first echelon, while signal reserves move at the head of the main column.

At the beginning of the engagement, the division commander usually moves forward to the advance guard post or some other position advantageous for observation. He is accompanied by mobile signal communications, the operations officer, and the chief reconnaissance and signal officers. An order to occupy artillery positions is generally given by the division artillery commander.

Having decided upon the new location, the division headquarters sets up its command post. It is generally established near and under the protection of the advance guard. Later on, when the main body of troops is committed to combat, the command post may be moved forward in the direction of main

effort. Setting up the command post in a meeting engagement is completed in a shortest possible time. Arrival of the division commander and his staff to a partly completed command post is a daily occurrence. At first, equipping the command post is limited to setting up a radio center, a message center, and an operational group. Prior to the battle and upon his own initiative, the chief signal officer takes all the necessary steps for setting up signal communication means, including wire communications.

Tactical control is carried out by verbal orders. At first, only radio (for short messages) and liaison officers are employed.

Cooperation is personally planned by the division commander when he assigns the mission. He tries to achieve mutual understanding between the unit commanders.

The chief of staff transmits plans for cooperation to regimental headquarters, checks signal tables and map codes, and issues the additional signs that will be necessary to conduct the operation.

The chief division reconnaissance officer sets up an observation system for the regiments, establishes an observation post at the command post, sends out additional observers, and achieves constant flow of information. Mobile observation points are used when necessary—a single tank or an armored car.

The complexity of a meeting engagement demands a systematic study of the enemy and the situation. Readiness of units for combat is predetermined to a large extent by preparations for the march and by the control of the marching units.

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Success in the training and education of troops are unthinkable without firm discipline and strict military order, to maintain which is the uppermost duty of the entire army personnel.

It is our commander cadres in the first place, including sergeants major and sergeants, the closest and immediate superiors and teachers of the Army, who must constitute the mainstay of discipline and orders.

*Generalissimo Josef Stalin*

## Our Strategy in Italy

Digested at the Command and General Staff School from an article by Lieutenant Colonel Alfred H. Burne, in "The Fighting Forces" (Great Britain), December 1945.

It is remarkable how military lessons repeat themselves, war after war, almost battle after battle—just as in peace-time they did in "maneuvers" after "maneuvers."

In the Italian campaign, the first note of criticism concerns the apparent waste of ammunition covering the Reggio landing. In a case like this it is, of course, easy to be "wise after the event." Still the fact is that our landing was virtually unopposed. More, it was actually assisted by our quondam enemies. "I do not suppose that in the history of war there has ever been a case of an invading army being met by its opponents on the shore of their native land with a touching of caps and a request to 'carry your bag, sir?'"

The strategy of the Naples campaign was simple. The Eighth Army was to lead off with a landing on the "toe"; a few days would then elapse in order to draw down the German defenders, after which the Fifth Army would land south of Naples, and the Germans would find themselves between two fires; Naples would fall, and the Fifth Army would then cut across the Peninsula to Foglia and capture its vast airfields. A pretty trap, but the Germans did not fall into it. The question arises whether we should not have been more prompt to mount a fresh strategy—an alternate plan—if the trap failed. It looks as if there was a slight lack of flexibility in planning—one of our besetting sins in the past.

It is now known that if we had landed earlier at Salerno we should have found the place practically undefeated—but not quite. A German diary shows that arrangements had been made to whistle up reinforcements fairly rapidly. And that is what happened. Nor would it be fair, in this instance, to charge our leaders with slowness. Our invasion had been projected for 15 December, and it was only on 15 August that Churchill asked General Alexander to advance the date. The landing was accordingly carried out only

sixteen days later, after which, in accordance with the trap, a few day's pause was essential before the Salerno landing. A fairer charge would be to say that there was lack of flexibility about the arrangements for Salerno. It was confidently believed that opposition would be slight, and hence heavy stuff—guns, tanks, etc.—was not immediately forthcoming on the beaches.

Meanwhile the Germans were reacting with the military speed and resolution so characteristic of them in this and the last war. The result was that the **Eighth Army** was called to the rescue. We watched its progress with interest tinged with anxiety, and it was with mingled feelings that we heard that contact had been made. Everyone's first thought was, What were the armored cars of the Eighth Army doing? A war correspondent writes: "At the time, Montgomery was criticized for slowness. There may be something in the charge. Enough supplies might have been gotten together to send a small token force up the west coast road, which was flat and had no broken bridges." Another war correspondent says: "We had come through 120 miles of no man's land from one army to another, but anyone else could have done it, and the episode strengthens my previous conviction that a quite unnecessary slackness had been allowed to develop in the British forces in this matter of following up and maintaining contact with a retreating enemy. There was too much inclination to accept demolition as an Act of God."

Though our object in landing at Anzio has never been officially announced there is little doubt that it is correct to assert that it was to cause the Germans at Cassino to fall back. This attempt was frustrated on the beach at Anzio.

Howsoever it be, the object of the Anzio landing was not achieved, and Alexander was left with the unpleasant alternative of sitting it out in an unfavorable position both

strategically and tactically, or cutting his losses and, at the expense of prestige and morale, evacuating the beachhead. As everyone knows, he decided on the former. It was a notable decision and it is worth while dwelling upon it for a moment.

I have said that the position was unfavorable strategically and tactically. Let me explain. Strategically we were on interior lines. The enemy could theoretically apply the "pincers" to the beachhead. Moreover, with the sea behind us there was only one line of retreat. Tactically, we were holding the lower ground, while the enemy from the higher ground had all the observation.

But there were certain assets, not immediately obvious, but not hidden from the experienced and discerning eye of General Alexander. In the first place, though theoretically the enemy could attack from all sides, in practice this was hardly feasible. "All roads lead to Rome." Very true; Rome is a bottleneck of communications, and as Kesselring could not spare troops from the Cassino front all reinforcements for his Anzio troops had to pass through Rome. Now in order to approach the southeastern face of our beachhead they would have to pass right across our front along the Latin Way, and over the Lepini Mountains (see sketch), a difficult, circuitous road. Concealment would be impossible, and by the time we had command of the air, they would be bound to take a heavy toll. Alexander therefore judged that the risk of convergent attack from the southeast and northeast could be faced. And he judged right. Whenever Kesselring attacked Anzio (and he did so three times) he received a "bloody nose." The reason for this brings out a further point, doubtless not overlooked by our Commander in Chief, namely, that a force operating on interior lines reaps some benefit from them if it possesses *time and space to maneuver*. The amount of time available depends of course on the motions of the enemy. Since it was not convenient for him to attack on both sides at once he accorded us the necessary *time*. *Space to maneuver* is a somewhat empirical figure, but at the present day it may

be taken as round about twenty miles in diameter. This was just the diameter of our beachhead, so it may be claimed that we had both *time* and *space* to maneuver, and consequently our position was strategically much sounder than appeared at first sight.

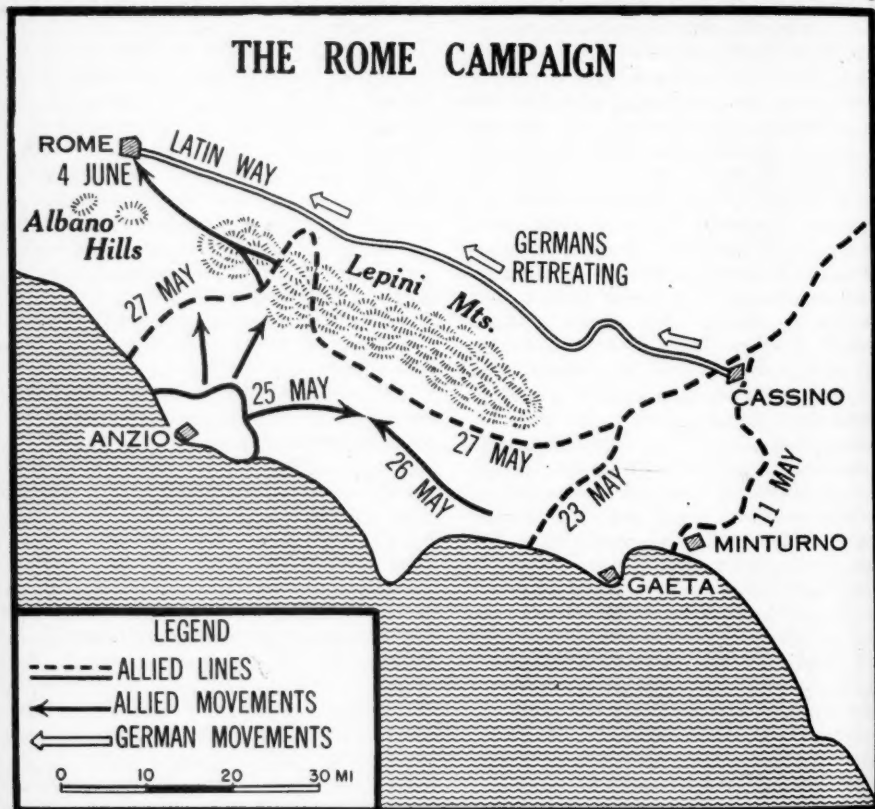
But there was yet another consideration, very much present in the mind of our Commander. Anzio was not the only "pebble on the beach." Sixty miles to the southeast the Fifth Army was battling. The force at Anzio, if viewed "in a vacuum," was operating on interior lines, but if viewed in conjunction with the Cassino troops it was on exterior lines with respect to the intervening Germans. Sixty miles is considerably more than my suggested figure of twenty miles necessary for freedom of maneuver, but if the Cassino force could, by attacking, reduce this distance materially, the strategical situation would become very favorable for a decisive operation on exterior lines.

We need not dwell upon the brilliant transference of the bulk of the Eighth Army to the decisive point (very reminiscent of the famous transference in the battle of Tunis), nor upon the futile bombing of Cassino Monastery, nor of the delay of three days before the infantry followed it up with their attack. These are all tactical lessons and pretty obvious. But strategy came into its own on 17 May, when the breakthrough from Cassino occurred and the great plan began to unfold itself. A rapid advance during the next five days brought the Americans on the left flank, on the 23d to well within forty miles of the beachhead. The great moment had arrived, the moment for which the devoted garrison had been patiently waiting for four literally bloody months. In the previous few days the Anzio beachhead had been materially reinforced. On the 25th, at the signal from Alexander, they sprang to the attack. Kesselring had just transferred three divisions from before Anzio to bolster up his Gustav Line before Cassino. But, acting as he was on exterior lines, he had not time to maneuver, nor in a short while *space* either. For American armor dashed forward along the famous Appian Way, and on the

25th the pincers met in the vicinity of Litoria. The battle was won, and Kesselring gave the order to pull out.

A reference to the map is now necessary. Roughly parallel to the Latin Way (now sometimes called Highway Six), and about

for the attacker by advancing straight to his front simultaneously safeguards his own communications and threatens those of the enemy. This is precisely what Alexander proceeded to do. While a portion of the Anzio garrison advanced southeast to join up with the troops



ten miles from it, run the Lepini Mountains, culminating on the west in the Albano Hills. Germans to the south of this line had now been liquidated but the passes remained in their hands. Now as we have seen, the Latin Way formed the main German line of communications. Hence the Germans lining the Lepini Mountains were holding a line parallel to their communications; in other words they had been forced to "form front to a flank." This is a notoriously unfavorable situation,

advancing from Cassino the main attack was directed northeastwards, making straight for the vital Latin Way.

Good progress was made, and on the 26th a position only three miles short of it had been reached with practically no opposition. It was not in fact until six days later that the Latin Way was cut and the Germans finally and completely cut off from Rome. We must agree that, taken all in all, it was a beautifully executed campaign.

## The Education and Training of Officers

Translated and digested at the Command and General Staff School from an article in Spanish by Colonel Martín Olmedo Prat in "Revista de la Fuerza Aérea" (Chile) May-June 1945.

THERE are many qualities an officer should possess, and these are expounded at length in well-known works. These may be grouped into intellectual, physical, and moral qualities. The relation that should exist between those of the intellectual and physical categories merits consideration.

In the lower ranks physical qualities have a certain preponderance, due to the fact that the command of small units is exercised in the field and the example has to be set by the leader.

As one rises in rank, the activities of the unit under one's command increases, the executive work requires more time, and the personal appearance of the commander in any of the subordinate parts of the unit is infrequent, since it is rarely possible for him to be present even before the unit as a whole.

An obvious example of this concept would arise in any fairly large unit when the question arises whether it is better that it be commanded by an officer of little intelligence and education, though a real athlete, or by a very intelligent officer highly educated though of mediocre qualities from the physical stand point.

In other words, to be an officer a young man of sound body and health, which will insure normal development, is required. But, above all else, intellectual qualities are needed that will render possible the gradual and intensive education and training required in the development of the personality of a commander who, above all else, must "know how."

No one, nowadays, is ignorant of the concept of the "nation in arms." Matters have gone even further than this, and at present war is waged by the entire nation; the national defense must be prepared and organized by all the intellectual and material resources a country possesses.

In selecting young men for training as officers, care must be taken that they pos-

sess the fundamental qualities required in an officer—proper mental and physical ability and moral aptitude—selecting men from all walks of life.

With the assignment of the officer to a body of troops, one phase of his education and training comes to a close and another is opened which will last till he reaches the highest ranks, in some cases and, in general, as long as he remains in active service; although, more properly stated, one should say as long as he remains capable of serving, for when he becomes a part of the reserve, he will have to continue working to preserve the qualities he has thus far acquired and, if possible, improve them and render himself capable if need be, of meeting still higher requirements.

The essential task of the profession is *command*. Every activity destined for training and perfecting the officer in a professional way must be conducted with this fact in mind.

The training of the officer, in its theoretical and practical aspects, begins with his incorporation in a unit and must be continued without interruption till he becomes a general officer.

The training of the officer must be based on systematic and well-coordinated studies throughout his entire career. Here we outline a plan which, though perhaps not the ideal solution, indicates the principal ideas relative to this interesting point:

(a) A course for lieutenants in the school of arms. To prepare them for the command of the basic unit (company, squadron or battery).

(b) A course for captains in the school of arms. To prepare them for the command of the unit immediately above the basic unit.

(c) A course in the General Staff School (*Academia de Guerra*). To train Staff officers and prepare them for the command of large units.



Courses in specialized branches: Technical aspect of army equipment, topography, geodesy.

(d) Army War College course (*Curso de Escuela Superior de Guerra*). To train Staff officers for national defense and to train senior officers for the command of large units.

(e) Military Intelligence courses for officers of various ranks in the arms or services.

Both lieutenants' and captains' courses should be conducted during the first years of the respective grades, for it is quite possible that the command of a higher unit will, by chance, be exercised by him first. Training him, beforehand, for such an eventuality is, in all cases, preferable to training him for the command of a basic unit, especially when he might never again in his career have to exercise command over such a unit.

The General Staff School should be attended by those officers who have completed the captains' course in the school of arms and who have excelled in command, for the function of the General Staff, although not directly exercising command, requires the collaboration with those engaged in its exercise. For this reason, staff officers must definitely spend a certain amount of time with troops, and both they and the military instructors must participate in maneuvers in the command of troops.

It will be difficult to obtain officers who have mastered more than one of the special Staff courses, such as those pertaining to the technical aspects of army equipment or topography, where these subjects call for considerable time in the field, but it is not well to limit the officer's opportunities of perfecting his training. The more he learns, the better fitted he will be to fulfill his professional duties, providing he does not lose sight of the fact that the fundamental thing is command, and that no concessions can be made in putting this into practice.

The creation of the Army War College is an imperative necessity imposed by the ex-

gencies of modern war, and the degrees of advancement achieved by our armed organizations. In order to obtain an efficient professional class, it is necessary to subject it throughout the entire period of its service with the armed forces, to systematic and well-coordinated training and instruction.

A military career involves the renunciation by those who enter it, of that which usually is most attractive to men—the prestige gained in civilian life—attaining wealth and economic independence. Service to the armed forces and the country ennoble the profession it is true; but because of the very fact that there are sacrifices in it, care should be taken not to add to them any serious interruptions in the progress through the various grades till the highest are reached, since this is the only recompense and true stimulus that is accorded the person who, enthusiastically and patriotically throughout the greater part of his life, dedicates himself without reserve to the service of the armed forces.

It is not fitting that there should be offered the same opportunities to the officer who through effort and complete dedication to the service has rendered himself capable of performing his official duties without any exceptions, as to the officer who, though he does not fail to fulfill his daily duties, has nevertheless neglected his training and improvement and who displays defects which permit only a very limited employment of his services. An organization which does not give due thought to selection, which does not stimulate its members and which makes indiscriminate use of both those with and those without ability, will make no progress but will, on the contrary, soon show signs of decadence and it will not be strange if it begins to show symptoms of decomposition.

An armed force will be worth just what its officers are worth. Making them efficient and maintaining them so, in accordance with the growing requirements of modern warfare, is the first duty of the functionaries responsible for national defense.

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One can never have too many guns; one never has enough.

Napoleon